Owner's Operator And Maintenance Manual

TOP END®

T-3™ Tennis Adjustable

T-3™ Tennis Elite

T-3™ Titanium

T-4™ Tennis Elite

T-4™ Titanium

DEALER/PROVIDER: THIS MANUAL MUST BE GIVEN TO THE USER OF THE WHEELCHAIR.

USER: BEFORE USING THIS WHEELCHAIR, READ THIS MANUAL AND SAVE FOR FUTURE REFERENCE.

For more information regarding Invacare products, parts, and services, please visit www.invacare.com

INVACARE®

Yes, you can.™

SPECIAL NOTES

WARNING/CAUTION notices as used in this manual apply to hazards or unsafe practices which could result in personal injury or property damage.

NOTICE

THE INFORMATION CONTAINED IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE.

WHEELCHAIR USER

As a manufacturer of wheelchairs, Invacare Top End endeavors to supply a wide variety of wheelchairs to meet many needs of the end user. However, final selection of the type of wheelchair to be used by an individual rests solely with the user and his/her health care professional capable of making such a selection.

TIE-DOWN RESTRAINTS AND SEAT RESTRAINTS

Invacare Top End recommends that wheelchair users NOT be transported in vehicles of any kind while in wheelchairs. As of this date, the Department of Transportation has not approved any tie-down systems for transportation of a user while in a wheelchair, in a moving vehicle of any type.

It is Invacare Top End's position that users of wheelchairs should be transferred into appropriate seating in vehicles for transportation and use be made of the restraints made available by the auto industry. Invacare Top End cannot and does not recommend any wheelchair transportation systems.

SEAT POSITIONING STRAP

ALWAYS wear your seat positioning strap.

The seat positioning strap is a positioning belt only. It is not designed for use as a safety device withstanding high stress loads such as auto or aircraft safety belts. If signs of wear appear, belt MUST be replaced immediately.

As regards restraints - seat/chest positioning straps - it is the obligation of the DME dealer, therapists and other healthcare professionals to determine if a seat/chest positioning strap is required to ensure the safe operation of this equipment by the user. SERIOUS INJURY CAN OCCUR IN THE EVENT OF A FALL FROM A WHEELCHAIR.

WARNING

Invacare products are specifically designed and manufactured for use in conjunction with Invacare accessories. Accessories designed by other manufacturers have not been tested by Invacare and are not recommended for use with Invacare products.

WARNING

DO NOT OPERATE THIS EQUIPMENT WITHOUT FIRST READING AND UNDERSTANDING THIS MANUAL. IF YOU ARE UNABLE TO UNDERSTAND THE WARNINGS, CAUTIONS, AND INSTRUCTIONS, CONTACT A HEALTHCARE PROFESSIONAL, DEALER, TECHNICAL PERSONNEL OR INVACARE TOP END CUSTOMER SUPPORT AT (800) 532-8677 BEFORE ATTEMPTING TO USE THIS EQUIPMENT - OTHERWISE INJURY AND/OR DAMAGE MAY RESULT.

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REGISTER YOUR PRODUCT!

The benefits of registering:

1. Safeguard your investment.
2. Ensure long term maintenance and servicing of your purchase.
3. Receive updates with product information, maintenance tips, and industry news.
4. Invacare can contact you or your provider, if servicing is needed on your product.
5. It will enable Invacare to improve product designs based on your input and needs.

Register ONLINE at www.invacare.com
- or -
Complete and mail the form on the next page

Any registration information you submit will be used by Invacare Corporation only, and protected as required by applicable laws and regulations.

PRODUCT REGISTRATION FORM

Register ONLINE at www.invacare.com - or -
Complete and mail this form

Name _____

Address _____

City _____ **State/Province** _____

Zip/Postal Code _____

Email _____ **Phone No.** _____ Fold here

Invacare Model No. _____ **Serial No.** _____

Purchased From _____ **Date of Purchase:** _____

1. Method of purchase: (check all that apply)
❑ Medicare ❑ Insurance ❑ Medicaid ❑ Other _____

2. This product was purchased for use by: (check one)
❑ Self ❑ Parent ❑ Spouse ❑ Other

3. Product was purchased for use at:
❑ Home ❑ Facility ❑ Other

4. I purchased an Invacare product because:
❑ Price ❑ Features (list features) _____

5. Who referred you to Invacare products? (check all that apply)
❑ Doctor ❑ Therapist ❑ Friend ❑ Relative ❑ Dealer/Provider ❑ Other_____
❑ Advertisement (circle one): TV, Radio, Magazine, Newspaper ❑ No Referral_____

6. What additional features, if any, would you like to see on this product?
_____ Fold here

7. Would you like information sent to you about Invacare products that may be available for a particular medical condition? ❑ Yes ❑ No
If yes, please list any condition(s) here and we will send you information by email and/or mail about any available Invacare products that may help treat, care for or manage such condition(s):
_____

8. Would you like to receive updated information via email or regular mail about the Invacare home medical products sold by Invacare's dealers? ❑ Yes ❑ No

9. What would you like to see on the Invacare website?
_____

10. Would you like to be part of future online surveys for Invacare products? ❑ Yes ❑ No

11. User's Year of birth: _____

If at any time you wish not to receive future mailings from us, please contact us at Invacare Corporation, CRM Department, 39400 Taylor Parkway, Elyria, OH 44035, or fax to 877-619-7996 and we will remove you from our mailing list.

To find more information about our products, visit www.invacare.com.

Cut Along Line

Fold here

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 196 ELYRIA OH

POSTAGE WILL BE PAID BY ADDRESSEE

INVACARE CORPORATION
CRM DEPARTMENT
39400 TAYLOR PARKWAY
ELYRIA OH 44035-9836

Fold here

Invacare Product Registration Form

Please Seal with Tape Before Mailing

Cut Along Line

TYPICAL PRODUCT PARAMETERS

NOTE: All specifications are approximate.

	T-3 TENNIS ELITE	T-3 TENNIS ADJUSTABLE
Seat Width:	12 to 19-inches in 1-inch increments	12 to 19-inches in 1-inch increments
Seat Depth:	12 to 18-inches in 1-inch increments	12 to 18-inches in 1-inch increments
Seat-to-Floor		
Front:	17 to 21-inches	17 to 21-inches
Rear:	13 to 21-inches	13 to 17-inches
Back Style:	Fixed (Standard)	Fixed (Standard), Fold Down (Optional)
Back Height Ranges		
Fixed Back:	8-14-inches in 1-inch increments	N/A
Low Back:	11-14-inches	11-14-inches
Medium Back:	14-18-inches	14-18-inches
High Back:	16-20-inches	16-20-inches
Wheel Base:	22, 24 or 26-inches	22, 24-inches
Footrests:	Adjustable Height/Angle/Depth	Adjustable Height/Angle/Depth
Side - Wheel Clearance:	1-inch Standard	1-inch Standard
Rear Axle:	Quick or Quad-Release (Optional)	Quick or Quad-Release (Optional)
Center of Gravity:	Fixed (Standard) Adjustable (Optional)	Adjustable
Rear Wheel Camber:		
Fixed Camber :	12°, 15°, 18° or 20°	N/A
Adjustable -		
Camber Tube 2000:	N/A	12°, 15°, 18°, 20°
A-4 Camber System:	N/A	0°, 3°, 6°, 9°, 12° - (Optional)
Rear Wheel Sizes:	22, 24, 25, 26-inch, 700 C Double walled rim high flange hub	22, 24, 25, 26-inch, 700C Double walled rim high flange hub
Tires		
22-inch Rear:	25-520	25-520 (Standard)
24-inch Rear:	Primo 25-540 24 x 1-inches (Standard) or Continental (Optional) 25-559 Primo (Standard)	Primo 25-540 24 x 1-inches (Standard), KIK™ or Continental, (Optional)
25-inch Rear:	26-590 Primo (Standard)	25-559 Primo (Standard)
26-inch Rear:		26-590 Primo (Standard)
700C Rear:	700C x 28	700C x 28
Handrims:	Aluminum Welded Tab (Standard) Vinyl Coated (Optional) Dual Grip (Optional)	Aluminum Welded Tab (Standard) Vinyl Coated (Optional) Dual Grip (Optional)
Optional Wheel Locks:	High Mount	High Mount
Caster Size:	3-inch Solid	3-inch Solid
Back/Seat Upholstery:	U240 Black - Adjustable Tension	U240 Black - Adjustable Tension
Weight:	From 17 lbs.	From 17 lbs.
Shipping Weight (approximately)*:	30 lbs.	30 lbs.
Weight Limitation:	250 lbs.	250 lbs.

*15 x 15-inch Seat Frame with complete package.

TYPICAL PRODUCT PARAMETERS

NOTE: All specifications are approximate.

	T-3 TITANIUM
Seat Width:	12 to 19-inches in 1-inch increments
Seat Depth:	12 to 18-inches in 1-inch increments
Seat-to-Floor	
Front:	17 to 21-inches
Rear:	13 to 21-inches
Back Style:	Fixed (Standard)
Back Height Ranges	
Fixed Back:	8-14-inches in 1-inch increments
Low Back:	11-14-inches
Medium Back:	14-18-inches
High Back:	16-20-inches
Wheel Base:	22, 24, and 26-inches
Footrests:	Adjustable Height/Angle/Depth
Side - Wheel Clearance:	1-inch Standard
Rear Axle:	Quick or Quad-Release (Optional)
Center of Gravity:	Fixed (Standard)
Rear Wheel Camber:	
Fixed -	
Camber Tube 2000:	12°, 15°, 18° or 20°
Adjustable -	
Camber Tube 2000:	N/A
A-4 Camber System:	N/A
Rear Wheel Sizes:	24, 25, 26-inch, 700C Double walled rim high flange hub
Tires	
22-inch Rear:	N/A
24-inch Rear:	Primo 25-540 24 x 1-inches (Standard), or Continental (Optional)
24-inch Rear:	25-559 Primo (Standard)
26-inch Rear:	26-590 Primo (Standard)
700C Rear:	N/A
Handrims:	Aluminum Welded Tab (Standard) Vinyl Coated (Optional) Dual Grip (Optional)
Optional Wheel Locks:	High Mount
Caster Size:	3-inch Solid
Back/Seat Upholstery:	U240 Black - Adjustable Tension
Weight:	From 15 lbs.
Shipping Weight (approximately)*:	30 lbs.
Weight Limitation:	250 lbs.
Options	See current order form

*15 x 15-inch Seat Frame with complete package.

TYPICAL PRODUCT PARAMETERS

NOTE: All specifications are approximate.

	T-4 ELITE AND T-4 TITANIUM
Seat Width:	12 to 19-inches in 1-inch increments
Seat Depth:	12 to 18-inches in 1-inch increments
Seat-to-Floor	
Front:	17 to 21-inches
Rear:	13 to 21-inches
Back Style:	Fixed (Standard)
Back Height Ranges	
Fixed Back:	8-14-inches in 1-inch increments
Low Back:	11-14-inches
Medium Back:	14-18-inches
High Back:	16-20-inches
Wheel Base:	17, 18, and 19-inches
Footrests:	Adjustable Height/Angle/Depth
Side - Wheel Clearance:	1-inch Standard
Rear Axle:	Quick or Quad-Release (Optional)
Center of Gravity:	Fixed (Standard)
Rear Wheel Camber:	
Fixed -	
Camber Tube 2000:	12°, 15°, 18° or 20°
Adjustable -	
Camber Tube 2000:	N/A
A-4 Camber System:	N/A
Rear Wheel Sizes:	24, 25, 26-inch, 700C Double walled rim high flange hub
Tires	
22-inch Rear:	N/A
24-inch Rear:	Primo 25-540 24 x 1-inches (Standard), or Continental (Optional)
25-inch Rear:	25-559 Primo (Standard)
26-inch Rear:	26-590 Primo (Standard)
700C Rear:	N/A
Handrims:	Aluminum Welded Tab (Standard) Vinyl Coated (Optional) Dual Grip (Optional)
Optional Wheel Locks:	High Mount
Caster Size:	3-inch Solid
Back/Seat Upholstery:	U240 Black - Adjustable Tension
Weight:	From 15 lbs.
Shipping Weight (approximately)*:	30 lbs.
Weight Limitation	250 lbs.
Options	See current order form

*15 x 15-inch Seat Frame with complete package.

This Procedure includes the following:
Stability
Operating Information
Tire Pressure
Weight Training
Weight Limitation
Safety/Handling of Wheelchairs

STABILITY

GENERAL GUIDELINES contains important information for the safe operation and use of this product. DO NOT use this product or any available optional equipment without first completely reading and understanding these instructions and any additional instructional material such as Owner's Manuals, Service Manuals or Instruction Sheets supplied with this product or optional equipment. If you are unable to understand the Warnings, Cautions or Instructions, contact a healthcare professional, dealer or technical personnel before attempting to use this equipment - otherwise, injury or damage may occur.

STABILITY WARNINGS

The position of the footrest, camber tube and rear seat height, the tautness of the back upholstery, as well as the user's condition are directly related to the chairs stability. Any change to one (1) or any combination of the five (5) may cause the chair to decrease in stability. Use EXTREME caution when using a new seating position.

	Footrest	Camber Tube	Rear Seat Height	Back Upholstery	User Condition
Footrest	•	n/a	n/a	n/a	✓
Camber Tube	n/a	•	n/a	n/a	✓
Rear Seat Height	n/a	n/a	•	n/a	✓
Back Upholstery	n/a	n/a	n/a	•	✓
User Condition	✓	✓	✓	✓	•

NOTE: When changes to the left hand column occur, follow across the chart and refer to the ✓ procedure to maintain the proper stability, safety and handling of the wheelchair.

To maintain maximum stability, position the camber tube in the most rearward position on the wheelchair frame. Moving the camber tube forward WILL cause the wheelchair to decrease in stability.

ALWAYS ensure stability BEFORE moving the camber tube forward. TEST wheelchair BEFORE it is occupied by the end user to ensure safety.

GENERAL WARNINGS (CONTINUTED)

DO NOT shift your weight or sitting position toward the direction you are reaching as the wheelchair may tip over.

DO NOT tilt the wheelchair without assistance.

DO NOT use an escalator to move a wheelchair between floors. Serious bodily injury may occur.

Before attempting to transfer in or out of the wheelchair, every precaution should be taken to reduce the gap distance. Align both casters parallel with the object you are transferring onto. When transferring to and from the wheelchair, ENGAGE BOTH WHEEL LOCKS, if equipped.

DO NOT operate on roads, streets or highways.

DO NOT climb, go up or down ramps or traverse slopes greater than 9°.

DO NOT attempt to move up or down an incline with a water, ice or oil film.

DO NOT attempt to ride over curbs or obstacles. Doing so may cause your chair to turn over and cause bodily harm or damage to the chair.

Invacare products are specifically designed and manufactured for use in conjunction with Invacare accessories. Accessories designed by other manufacturers have not been tested by Invacare and are not recommended for use with Invacare products.

DO NOT attempt to lift the wheelchair by on any removable (detachable) parts. Lifting by means of any removable (detachable) parts of a wheelchair may result in injury to the user or damage to the wheelchair.

DO NOT stand on the frame of the wheelchair.

Anti-tippers MUST BE attached at all times. Inasmuch as the ANTI-TIPPERS are an option on this wheelchair (You may order with or without the anti-tippers), Invacare strongly recommends ordering the anti-tippers as an additional safeguard for the wheelchair user.

Anti-tippers MUST be used at all times. when outdors on wet, soft ground or on gravel surfaces, anti-tippers may not provide the same level of protection against tip over. Extra caution MUST be observed when traversing such surfaces.

DO NOT use the footplate as a platform when getting in or out of the wheelchair.

GENERAL WARNINGS (CONTINUTED)

ALWAYS wear your seat positioning strap. Inasmuch as the SEAT POSITIONING STRAP is an option on this wheelchair (You may order with or without the seat positioning strap), Invacare Top End strongly recommends ordering the seat positioning strap as an additional safeguard for the wheelchair user.

The seat positioning strap is a positioning belt only. It is not designed for use as a safety device withstanding high stress loads such as auto or aircraft safety belts. If signs of wear appear, belt MUST be replaced immediately.

ALWAYS use the handrims for self-propulsion. Inasmuch as the HANDRIMS are an option on this wheelchair (you may order with or without the handrims), Invacare strongly recommends ordering the handrims as an additional safeguard for the wheelchair user.

TIRE PRESSURE

DO NOT use your wheelchair unless it has the proper tire pressure (p.s.i.). DO NOT overinflate the tires. Failure to follow these suggestions may cause the tire to explode and cause bodily harm.

Replacement of the tire or tube MUST be performed by a qualified technician.

WEIGHT TRAINING

Invacare Top End DOES NOT recommend the use of its wheelchairs as a weight training apparatus. Invacare Top End wheelchairs have NOT been designed or tested as a seat for any kind of weight training. If occupant uses said wheelchair as a weight training apparatus, Invacare Top End shall NOT be liable for bodily injury and the warranty will be voided immediately.

WEIGHT LIMITATION

The Invacare Top End T-3 Tennis Adjustable, T-3 Tennis Elite, T-3 Titanium, the T-4 Tennis Elite and T-4 Titanium wheelchairs have a weight limitation of 250 lbs The. T-4 wheelchair has a weight limitation of 250 lbs.

SAFETY/HANDLING OF WHEELCHAIRS

"Safety and Handling" of the wheelchair requires the close attention of the wheelchair user as well as the assistant. This manual points out the most common procedures and techniques involved in the safe operation and maintenance of the wheelchair. It is important to practice and master these safe techniques until you are comfortable in maneuvering around the frequently encountered architectural barriers. Use this information only as a "basic" guide. The techniques that are discussed on the following pages have been used successfully by many.

Individual wheelchair users often develop skills to deal with daily living activities that may differ from those described in this manual. Invacare Top End recognizes and encourages each individual to try what works best for him/her in overcoming architectural obstacles that they may encounter, however, ALL WARNINGS and CAUTIONS given in this manual MUST be followed. Techniques in this manual are a starting point for the new wheelchair user and assistant with "safety" as the most important consideration for all.

STABILITY AND BALANCE

WARNING

ALWAYS wear your seat positioning strap. Inasmuch as the SEAT POSITIONING STRAP is an option on this wheelchair (You may order with or without the seat positioning strap), Invacare Top End strongly recommends ordering the seat positioning strap as an additional safeguard for the wheelchair user.

The seat positioning strap is a positioning belt only. It is not designed for use as a safety device withstanding high stress loads such as auto or aircraft safety belts. If signs of wear appear, belt MUST be replaced immediately.

Anti-tippers MUST BE attached at all times. Inasmuch as the ANTI-TIPPERS are an option on this wheelchair (You may order with or without the anti-tippers), Invacare strongly recommends ordering the anti-tippers as an additional safeguard for the wheelchair user.

Anti-tippers MUST be used at all times. when outdors on wet, soft ground or on gravel surfaces, anti-tippers may not provide the same level of protection against tip over. Extra caution MUST be observed when traversing such surfaces.

To assure stability and proper operation of your wheelchair, you must at all times wear your seat positioning strap and maintain proper balance. Your wheelchair has been designed to remain upright and stable during normal daily activities as long as you do not move beyond the center of gravity.

Virtually all activities which involve movement in the chair have an effect on the center of gravity. Invacare Top End recommends using seat positioning straps for additional safety while involved in activities that shift your weight.

DO NOT lean forward out of the chair any further than stability will allow. Make sure the caster is pointing in the forward position whenever you lean forward. This can be achieved by advancing the chair and then reversing it in a straight line.

COPING WITH EVERYDAY OBSTACLES

Coping with the irritation of everyday obstacles can be alleviated somewhat by learning how to manage your wheelchair. Keep in mind your center of gravity to maintain stability and balance.

A NOTE TO WHEELCHAIR ASSISTANTS

When assistance to the wheelchair user is required, remember to use good body mechanics. Keep your back straight and bend your knees whenever tilting the chair or traversing curbs, or other impediments.

WARNING

DO NOT attempt to lift the wheelchair by on any removable (detachable) parts. Lifting by means of any removable (detachable) parts of a wheelchair may result in injury to the user or damage to the wheelchair.

Also, be aware of any removable (detachable) parts. These must NEVER be used for hand-hold or lifting supports, as they may be inadvertently released, resulting in possible injury to the user and/or assistant(s).

When learning a new assistance technique, have an experienced assistant help you before attempting it alone.

PERCENTAGE OF WEIGHT DISTRIBUTION

WARNING

DO NOT attempt to reach objects if you have to move forward in the seat or pick them up from the floor by reaching down between your knees.

Many activities require the wheelchair owner to reach, bend and transfer in and out of the wheelchair. These movements will cause a change to the normal balance, the center of gravity, and the weight distribution of the wheelchair. To determine and establish your particular safety limits, practice bending, reaching and transferring activities in several combinations in the presence of a qualified health professional BEFORE attempting active use of the wheelchair.

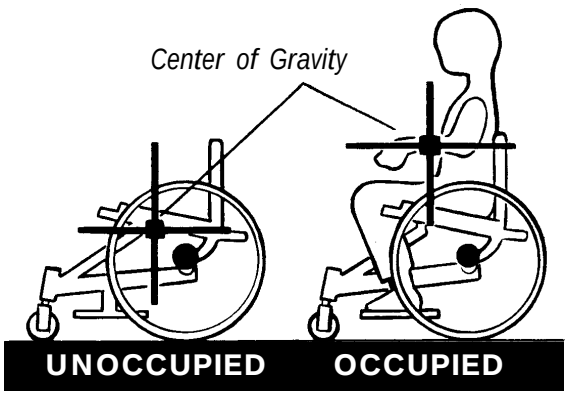
Proper positioning is essential for your safety. When reaching, leaning, bending or bending forward, the front caster can act as a tool to maintain stability and balance.

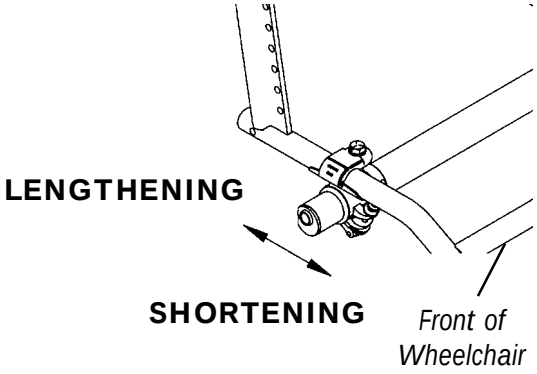
The position of the footrest, camber tube and rear seat height, the tautness of the back upholstery, as well as the user's condition are directly related to the chairs stability. Any change to one (1) or any combination of the five (5) may cause the chair to decrease in stability. Use EXTREME caution when using a new seating position.

Adjustable Models Only.

LENGTHENING WHEELBASE will increase the stability and maintain standard maneuverability of the chair.

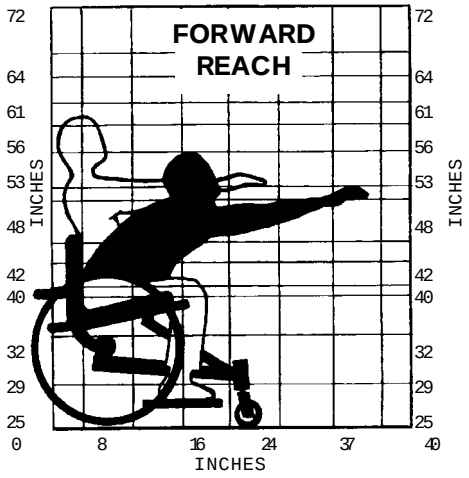
SHORTENING WHEELBASE will decrease the stability, increase the maneuverability and distribute additional weight onto the rear wheels.





FUNCTIONAL REACH FROM A WHEELCHAIR

The approximate reach-limit values shown in the accompanying graphs were derived on the basis of a sample of 91 male and 36 female wheelchair users. Note the difference between the maximum and the comfortable reach limits, a subjective but important consideration in design.

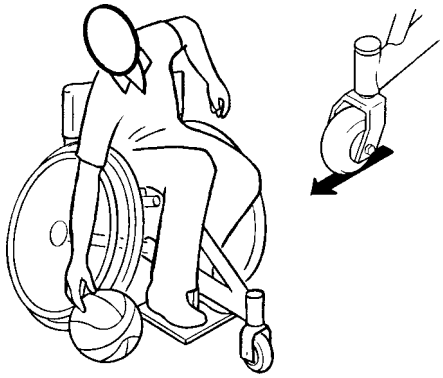


Reaching, Leaning, Bending And Bending - Forward.

Position the front caster so that it is extended as far forward as possible and engage wheel locks (if so equipped).

WARNING

DO NOT attempt to reach objects if you have to move forward in the seat or pick them up from the floor by reaching down between your knees.

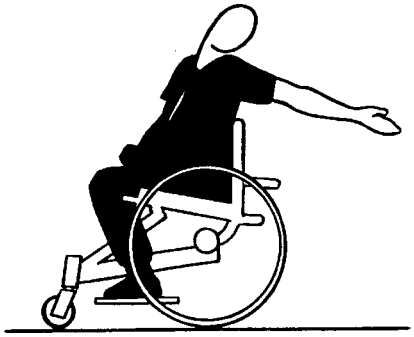


Reaching, Bending - Backwards.

WARNING

DO NOT lean over the top of the back upholstery. This will change your center of gravity and may cause you to tip over.

Position wheelchair as close as possible to the desired object. Point front caster forward to create the longest possible wheelbase. Reach back only as far as your arm will extend without changing your sitting position.



TILTING

CAUTION

DO NOT tilt the chair without assistance.

When tilting the wheelchair, an assistant should grasp the back of the chair on a non-removable (non-detachable) part. Inform the chair occupant before tilting the chair and remind him/her to lean back. Be sure the occupant's feet and hands are clear of all wheels.

Tilting - Curbs.

WARNING

Invacare Top End does not recommend that these sport chairs be used where traversing curbs present an obstacle. Possible injury to occupant and/or assistant(s) can occur. Transfer to an everyday use chair is recommended if any such obstacles may be encountered.

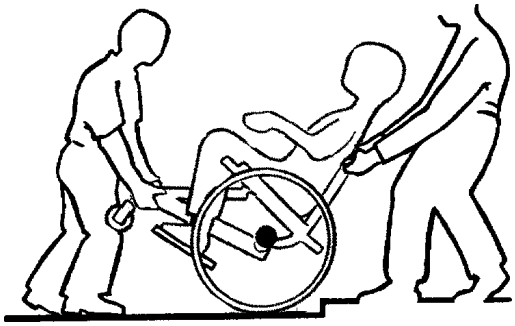
After mastering the techniques of tilting the chair, use this procedure to tackle curbs, short stairs, etc.

Unless the first assistant has exceptional upper body strength, it is recommended that two (2) assistants perform this operation. The second assistant should be positioned at the front of the wheelchair lifting upward on a non-removable (non-detachable) part of the wheelchair frame when lifting the wheelchair and stabilizing the wheelchair when the wheelchair is being lowered to the ground.

The first assistant should stand on the sidewalk and turn the chair so that the rear wheels are against the curb. The wheelchair should be tilted back to the balance point and, in one continuous movement, the rear wheels should be pulled up and over the curb. DO NOT return the front caster to the ground until the chair back has been pulled backward far enough to clear the edge of the curb.

WARNING

When lowering the front caster of the wheelchair, DO NOT let the wheelchair drop the last few inches to the ground. This could result in injury to the occupant and/or damage to the wheelchair.



Roll the wheelchair backward and **SLOWLY** lower the wheelchair in one continuous movement. DO NOT let the wheelchair drop the last few inches to the ground. This could result injury to the occupant.

STAIRWAYS

WARNING

ALWAYS wear your seat positioning strap. Inasmuch as the SEAT POSITIONING STRAP is an option on this wheelchair (You may order with or without the seat positioning strap), Invacare Top End strongly recommends ordering the seat positioning strap as an additional safeguard for the wheelchair user.

Invacare Top End does not recommend these wheelchairs be transported up or down stairways with occupant in the wheelchair. Possible injury to occupant and/or assistant(s) can occur. Transfer to an everyday use wheelchair is recommended.

DO NOT attempt to lift the wheelchair by on any removable (detachable) parts. Lifting by means of any removable (detachable) parts of a wheelchair may result in injury to the user or damage to the wheelchair.

Extreme caution is advised when it is necessary to move an occupied wheelchair up or down a stairway. Invacare Top End recommends that, if possible, the user be removed from the chair prior to moving. Invacare Top End recommends using two (2) assistants and making thorough preparations. Make sure to use ONLY secure, non-detachable parts for hand-hold supports.

Follow this procedure for moving the chair between floors when an elevator is NOT available:

1. After the chair has been tilted back to the balance point, one assistant (in the rear) backs the chair up against the first step, while securely grasping a non-removable (non-detachable) part of the chair for leverage.
2. The second assistant, with a firm hold on a non-detachable part of the framework, lifts the chair up and over the stair and steadies the wheelchair as the first assistant places one (1) foot on the next stair and repeats STEP 1.
3. The wheelchair should not be lowered until the last stair has been negotiated and the wheelchair has been rolled away from the stairway.

ESCALATORS? SORRY!

DO NOT use an escalator to move a wheelchair between floors. Serious bodily injury may occur.

TRANSFERRING TO AND FROM OTHER SEATS

WARNING

BEFORE attempting to transfer in or out of the wheelchair, every precaution should be taken to reduce the gap distance. Align the front caster parallel to the object you are transferring onto. Also be certain the wheel locks are engaged to help prevent the wheels from moving.

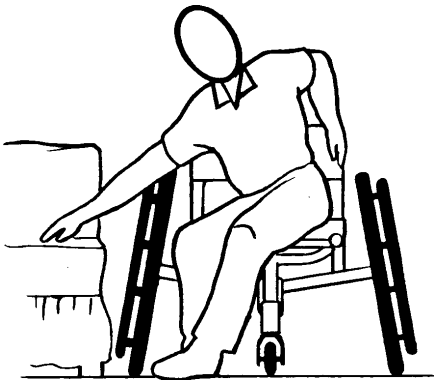
CAUTION

When transferring, position yourself as far back as possible in the seat. This will prevent damaged upholstery and the possibility of the chair tipping forward.

NOTE: This activity may be performed independently provided you have adequate mobility and upper body strength.

Position the chair as close as possible along side the seat to which you are transferring, with the front caster parallel to it. Engage wheel locks (if applicable). Shift body weight into seat with transfer.

During independent transfer, little or no seat platform will be beneath you. Use a transfer board if at all possible.



This Procedure includes the following:
Safety Inspection Checklist
Troubleshooting
Maintenance

SAFETY INSPECTION CHECKLIST

NOTE: Every six (6) months take your wheelchair to a qualified dealer for a thorough inspection and servicing. Regular cleaning will reveal loose or worn parts and enhance the smooth operation of your wheelchair. To operate properly and safely, your wheelchair must be cared for just like any other vehicle. Routine maintenance will extend the life and efficiency of your wheelchair.

Initial adjustments should be made to suit your personal body structure and preference. Thereafter follow these maintenance procedures:

ITEM	INITIALLY	INSPECT/ ADJUST WEEKLY	INSPECT/ ADJUST MONTHLY	INSPECT/ ADJUST PERIODICALLY
GENERAL				
Wheelchair rolls straight (no excessive drag or pull to one side).	X			X
WHEEL LOCKS				
Do not interfere with tires when rolling.	X		X	
Pivot points free of wear and looseness.	X		X	
Wheel locks easy to engage.	X			X
SEAT AND BACK UPHOLSTERY				
Inspect for rips or sagging.	X			X
Inspect fastening flaps to ensure they securely latch.	X		X	
Inspect seat positioning strap for any signs of wear. Ensure buckle latches. Verify hardware that attaches strap to frame is secure and undamaged. Replace if necessary.		X		X
REAR WHEELS				
Adjustable Camber System is securely tightened **(if applicable)**.	X		X	X
Quick/Quad-release axles lock properly.	X	X		
No excessive side movement or binding when lifted and spun.	X			X
HANDRIMS				
Inspect for signs of rough edges or peeling.	X			X
SPOKES				
Inspect for bent or broken spokes.	X	X		
All spokes uniformly tight.	X	X		

SAFETY INSPECTION CHECKLIST (CONTINUED)

ITEM	INITIALLY	INSPECT/ ADJUST WEEKLY	INSPECT/ ADJUST MONTHLY	INSPECT/ ADJUST PERIODICALLY
FRONT CASTER				
Inspect wheel/fork assembly for proper tension by spinning caster; caster should come to a gradual stop.	X	X		
Loosen/tighten locknut if wheel wobbles noticeably or binds to a stop.	X		X	
Wheel bearings are clean and free of moisture.	X		X	X
CAUTION: As with any vehicle, the wheels and tires should be checked periodically for cracks and wear, and should be replaced.				
TIRES				
Inspect for flat spots and wear.	X	X		
If pneumatic tires check for proper inflation.	X	X		
CAUTION: As with any vehicle, the wheels and tires should be checked periodically for cracks and wear, and should be replaced.				
CLEANING				
Clean upholstery and armrests.	X			X

TROUBLESHOOTING

CHAIR VEERS RIGHT	CHAIR VEERS LEFT	SLUGGISH TURN OR PERFORMANCE	CASTER FLUTTERS	SQUEAKS AND RATTLES	LOOSENESS IN CHAIR	SOLUTIONS
X	X	X	X			**Check tires for correct and equal pressure.**
		X	X	X	X	**Check for loose stem nuts.**
				X	X	**Check spokes and nipples.**

MAINTENANCE

MAINTENANCE SAFETY PRECAUTIONS

WARNING

After making adjustments, always make sure that parts are properly tightened BEFORE using the wheelchair.

CAUTION

DO NOT overtighten hardware attaching to the frame. This could cause damage to the frame tubing.

SUGGESTED MAINTENANCE PROCEDURES

1. Before using your Invacare Top End wheelchair, make sure all nuts and bolts are tight. Check all parts for damage or wear and replace. Check all parts for proper adjustment.
2. Keep quick/quad-release axles free of dirt and lint to ensure positive locking and proper operation. Refer to ADJUSTING QUICK-RELEASE AXLES or INSTALLING/ADJUSTING QUAD-RELEASE AXLES in PROCEDURE 6 of this manual.

WARNING

DO NOT use WD-40®, 3-in-1 oil®, or other penetrating lubricants on quick-release axles or camber inserts. Otherwise, binding and/or damage to the wheelchair may occur.

3. Clean quick-release axles and camber inserts once (1) a week with a Teflon® lubricant.

WARNING

DO NOT use the wheelchair unless it has the proper tire pressure (p.s.i.). DO NOT overinflate the tires. Failure to follow these suggestions may cause the tire to explode and cause bodily harm.

4. Recommended tire pressure is listed on the side wall of the tire.
5. The wheels and tires should be checked periodically for cracks and wear, and should be replaced by a qualified technician.
6. Regularly check for loose spokes in the rear wheels. If loose, have them adjusted by a qualified technician.
7. Periodically check handrims to ensure they are secured to the rear wheels. Refer to HANDRIM REPLACEMENT in PROCEDURE 6 of this manual.
8. Periodically adjust wheel locks as tires wear. Refer to WHEEL LOCK ADJUSTMENT in PROCEDURE 6 of this manual.
9. Periodically check caster wheel bearings to make sure they are clean and free from moisture. Use a Teflon lubricant if necessary.
10. Check upholstery for sagging, rips or tears.

This Procedure includes the following:
Adjusting/Replacing Back Upholstery
Folding Back
Back Height Adjustment
Back Angle Adjustment

WARNING

After ANY adjustments, repair or service and BEFORE use, make sure all attaching hardware is tightened securely - otherwise injury or damage may result.

ADJUSTING/REPLACING BACK UPHOLSTERY (FIGURE 1)

WARNING

The position of the footrest, camber tube and rear seat height, the tautness of the back upholstery, as well as the user's condition are directly related to the chairs stability. Any change to one (1) or any combination of the five (5) may cause the chair to decrease in stability. Use EXTREME caution when using a new seating position.

ADJUSTING BACK UPHOLSTERY

1. Unlatch the two (2) fastening flaps that secure the top of the back upholstery to the back canes.
2. Align the top of the back upholstery with the fastening flaps ensuring the top of the back upholstery is even with the top of the back canes.
3. Adjust to the desired tautness.

   TIGHTER back upholstery will increase the stability and maintain normal maneuverability of the chair because the user is pushed forward in the chair slightly.

   LOOSER back upholstery will increase the maneuverability and make the chair more prone to tipping because additional weight is being distributed onto the rear wheels.
4. Securely latch the back upholstery to the fastening flaps.

NOTE: Make sure the rear retaining flap is BETWEEN the chair frame and the back cane support brackets.

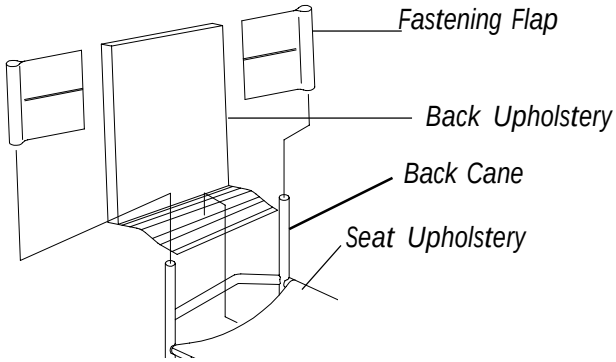


FIGURE 1 - ADJUSTING/REPLACING BACK UPHOLSTERY

REPLACING BACK UPHOLSTERY

1. Unlatch the two (2) fastening flaps that secure the top of the back upholstery to the back canes.
2. Remove the fastening flaps from the back canes by lifting straight up.
3. Remove the seat cushion.
4. Separate bottom of back upholstery from either underside or top of seat upholstery (depending on back style).
5. Install NEW fastening flaps onto the back canes.

NOTE: The fastening flap with the Invacare Top End logo is for the left back cane.

6. Securely latch the back upholstery to the fasteners on either the underside or top of the seat upholstery (depending on back style).
7. Adjust the NEW upholstery to the desired tautness. Refer to ADJUSTING BACK UPHOLSTERY in this procedure of the manual.

FOLDING BACK (FIGURE 2)

NOTE: This procedure is for folding back chairs only.

WARNING

Back MUST be locked securely in place before using the chair.

1. Lift up on the back and pull towards the rear of the chair until it locks into place.
2. To fold the back, pull up on the black nylon cord and push the back forward.

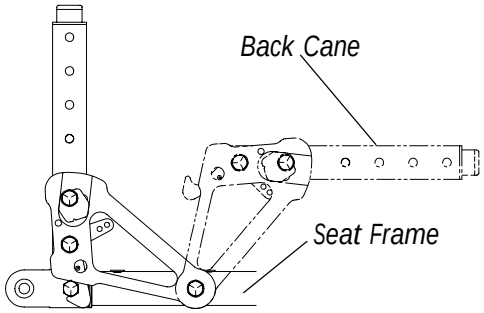


FIGURE 2 - FOLDING BACK

BACK HEIGHT ADJUSTMENT (FIGURE 3)

NOTE: This procedure is for adjustable back chairs only.

NOTE: Note tautness of back upholstery for reinstallation.

1. Unlatch the two (2) fastening flaps that secure the top of the back upholstery to the back canes and remove from the back canes.

WARNING

Push pin MUST be protruding through hole in back cane.

Ensure that both back cane inserts are at the same height BEFORE reassembling chair.

2. Press the push pin on the back cane insert tube in and adjust the back height to one (1) of four (4) heights depending on original back height:

Original Back Height (in inches)	* HOLE # 1	2	3	4
11-14	10	11	12	13
14-18	13	14	15	16
16-20	16	17	18	N/A

***** Holes numbered from bottom to top for reference only. (There are no numbers on the back canes.)

3. Reinstall the fastening flaps onto the back canes.

NOTE: The fastening flap with the Invacare Top End logo is for the left back cane when standing behind the chair.

4. Adjust the NEW back upholstery to the desired tautness. Refer to ADJUSTING/REPLACING BACK UPHOLSTERY in this procedure of the manual.

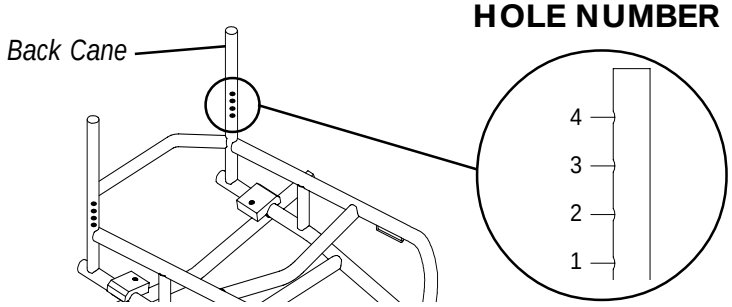


FIGURE 3 - BACK HEIGHT ADJUSTMENT

BACK ANGLE ADJUSTMENT (FIGURE 4)

NOTE: This procedure is for fold down back chairs only.

NOTE: DO NOT remove the hex screws that secure the back angle bracket to the chair frame and back cane.

NOTE: Perform procedure to both sides at the same time.

1. Loosen the locknuts and hex screws that secure the back angle bracket to the chair frame and the back cane.

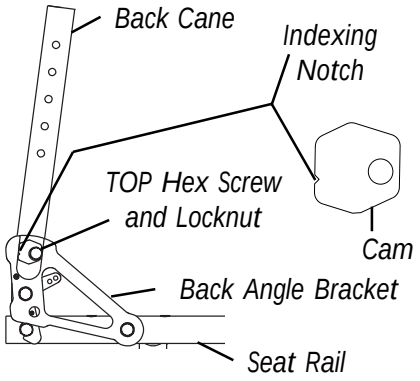
2. Loosen the TOP hex screw locknut and slide the TOP hex screw away from the back angle mounting bracket to adjust the cam.
3. Adjust back canes to approximate back angle required.
4. Adjust cam to achieve desired position.

NOTE: An indexing notch has been put on the adjustment cam to help determine cam position for desired back angle adjustment.

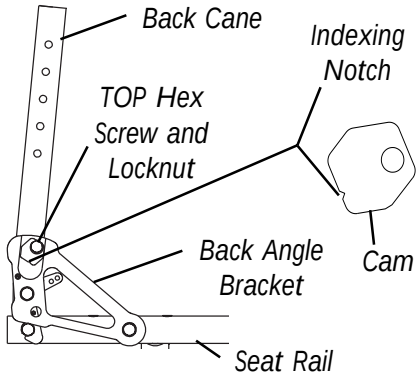
5. Reassemble and torque hex screws to 960-1020 inch pounds (80-85 foot pounds).

NOTE: As shown in FIGURE 4, the adjustment cam can be rotated to several different positions thus changing the overall back angle relative to the seat rail.

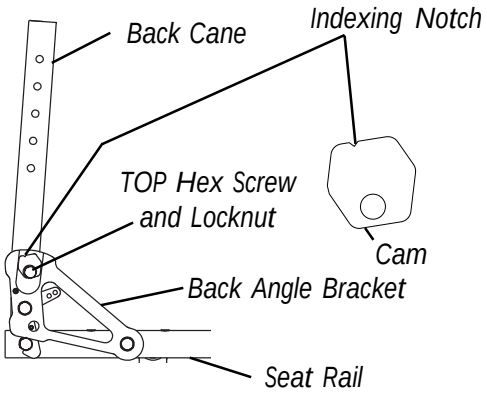
73° BACK ANGLE TO SEAT RAIL



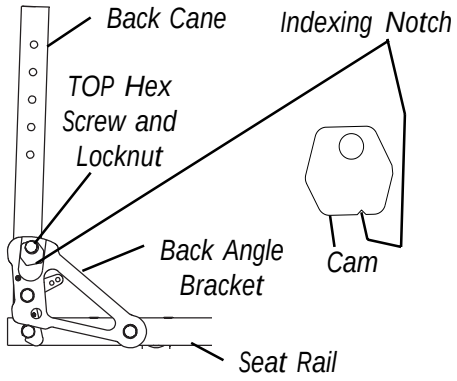
77° BACK ANGLE TO SEAT RAIL



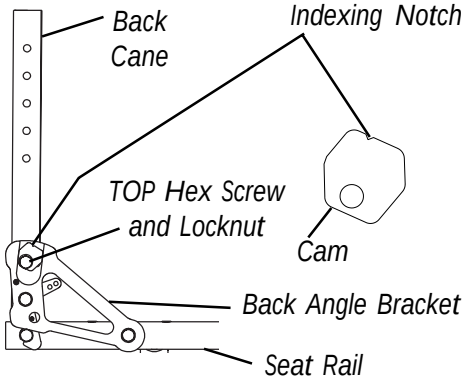
84° BACK ANGLE TO SEAT RAIL



85° BACK ANGLE TO SEAT RAIL



90° BACK ANGLE TO SEAT RAIL



94° BACK ANGLE TO SEAT RAIL

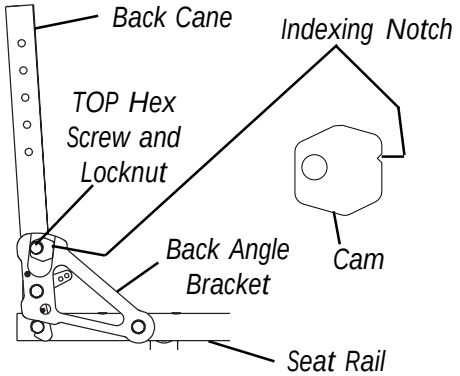


FIGURE 4 - BACK ANGLE ADJUSTMENT

This Procedure includes the following:
Seat Upholstery Replacement
Rear Seat Height Adjustment
Front Seat Height Adjustment

WARNING

After ANY adjustments, repair or service and BEFORE use, make sure all attaching hardware is tightened securely - otherwise injury or damage may result.

SEAT UPHOLSTERY REPLACEMENT (FIGURE 1)

1. Remove the seat cushion and back upholstery from the chair.
2. Place the chair onto its two (2) rear wheels.
3. Unlatch the five (5) fastening flaps that secure the seat upholstery to the chair frame.
4. Remove the existing seat upholstery.
5. Place the chair back onto all three (3) wheels.
6. Install the NEW seat upholstery making sure the five (5) fastening flaps hang over the right and left sides of the chair frame.

NOTE: The seat upholstery MUST be positioned with the three (3) double-sided fastening flaps towards the rear of the chair for proper installation of the back upholstery.

NOTE: Make sure the rear retaining flap is BETWEEN the chair frame and the back cane support brackets (adjustable backs only).

7. Secure the front fastening flaps on the underside of the chair frame and securely latch together.
8. Place the chair onto its two (2) rear wheels.
9. Securely latch the four (4) remaining fastening flaps together.
10. Place the chair onto all three (3) wheels.
11. Reinstall the back upholstery and seat cushion onto the chair. Refer to ADJUSTING/ REPLACING BACK UPHOLSTERY in PROCEDURE 3 of this manual.

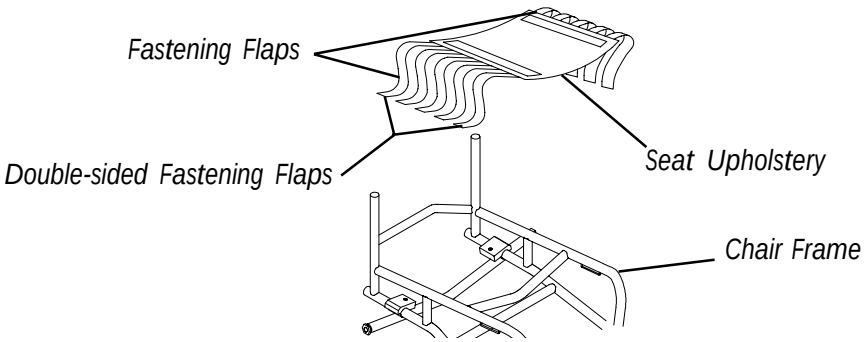


FIGURE 1 - SEAT UPHOLSTERY REPLACEMENT

REAR SEAT HEIGHT ADJUSTMENT

NOTE: This procedure is for T-3 Elite models with rear seat height adjustment and T-3 Adjustable models ONLY.

WARNING

The position of the footrest, camber tube, seat height, the tautness of the back upholstery, as well as the user's condition are directly related to the chair's stability. Any change to one (1) or any combination of the five (5) may cause the chair to decrease in stability. Use EXTREME caution when using a new seating position.

Before 2001 (FIGURE 2)

1. Loosen, but do not remove the front set screws.
2. Remove the set screws at the rear of the seat rails.

WARNING

Ensure that both seat rails are aligned in the correct mounting holes for proper and even seat alignment. A fall and possible injury could occur.

3. Move the rear of the seat rails up or down into one of the five (5) adjustment positions.

*REAR SEAT TO FLOOR RANGE (IN INCHES)

❖HOLE #	1	2	3	4	5
*HEIGHT	13	14	15	16	17

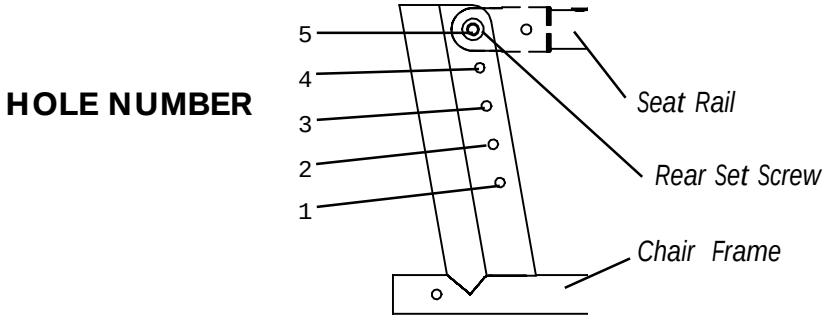


FIGURE 2 - REAR SEAT HEIGHT ADJUSTMENT - BEFORE 2001

After 2000 (FIGURE 3)

1. Loosen the locknut at the front of the seat.
2. Loosen both spreader bar screws.
3. Loosen both seat angle screws.
4. Adjust the spreader bar to the desired position.
5. Tighten the seat angle screws, spreader bar screws and the locknut at the front of the seat.

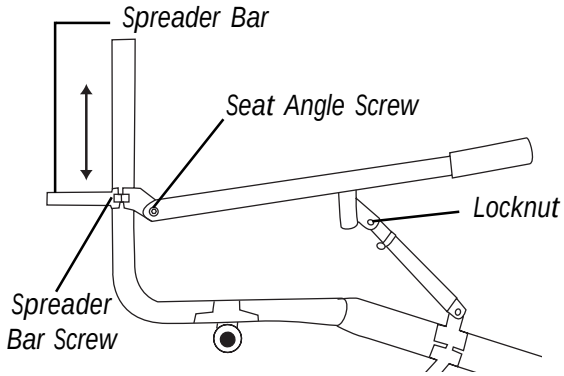


FIGURE 3 - REAR SEAT HEIGHT ADJUSTMENT - AFTER 2000

FRONT SEAT HEIGHT ADJUSTMENT

NOTE: This procedure is for T-3 Adjustable models ONLY.

WARNING

The position of the footrest, camber tube, seat height, the tautness of the back upholstery, as well as the user's condition are directly related to the chair's stability. Any change to one (1) or any combination of the five (5) may cause the chair to decrease in stability. Use EXTREME caution when using a new seating position.

Before 2001 (FIGURE 4)

1. Loosen, but do not remove the two (2) set screws that secure the seat rail to the chair frame.
2. Loosen, but do not remove the four (4) set screws that secure the seat adjustment weldment in place.
3. Move the seat up or down until the seat is at the desired height.
4. Securely tighten the four (4) set screws that secure the seat adjustment weldment in place.
5. Securely tighten the two (2) set screws that secure the seat rail to the chair frame.
6. Adjust the footrest height. Refer to PROCEDURE 7 of this manual.

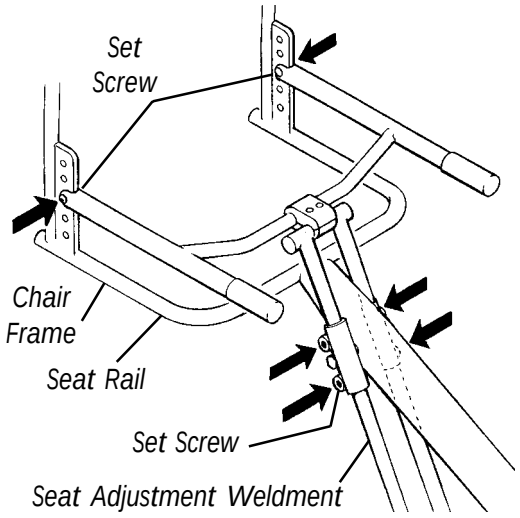


FIGURE 4 - FRONT SEAT HEIGHT ADJUSTMENT - BEFORE 2001

After 2001 (FIGURE 5)

1. Loosen the seat angle screw.
2. Loosen the locknut at the front of the seat.
3. Loosen the locknut on the frame adjustment clamp.
4. Adjust the front of the seat rail to the desired height.
5. Tighten the locknut on the frame adjustment clamp.
6. Tighten the locknut at the front of the seat.
7. Tighten the seat angle screw.
8. Adjust the footrest height. Refer to PROCEDURE 7 of this manual.

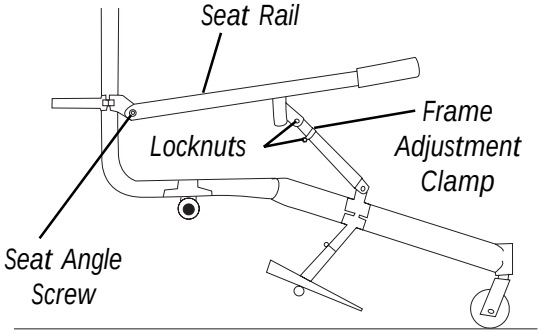


FIGURE 5 - FRONT SEAT HEIGHT ADJUSTMENT - AFTER 2001

This Procedure includes the following:
Nylon Clothing Guard With Plastic Insert Replacement
Rigid Clothing Guard Replacement

WARNING

After ANY adjustments, repair or service and BEFORE use, make sure all attaching hardware is tightened securely - otherwise injury or damage may result.

NYLON CLOTHING GUARD WITH PLASTIC INSERT REPLACEMENT (FIGURE 1)

1. Lift up on the seat cushion and remove it from the chair.
2. Separate the nylon clothing guard with plastic insert from the seat and back upholstery.
3. Install NEW nylon clothing guard with plastic insert onto the seat and back upholstery.

NOTE: The fastening flaps that secure the nylon clothing guards to the back upholstery wrap around the outside of the back canes.

4. Reattach the seat cushion to the seat upholstery.

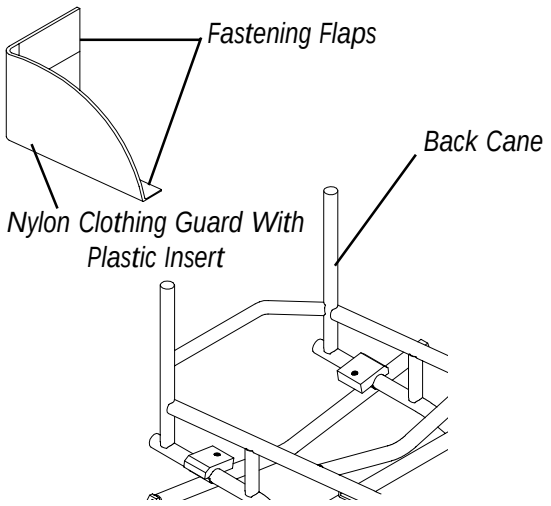


FIGURE 1 - NYLON CLOTHING GUARD WITH PLASTIC INSERT REPLACEMENT

RIGID CLOTHING GUARD REPLACEMENT (FIGURE 2)

1. Remove rear wheels if necessary. Refer to REMOVING/INSTALLING REAR WHEELS in PROCEDURE 6 of this manual.
2. Remove seat cushion from chair.
3. Install the clothing guard clamps to the chair as shown in FIGURE 2 with the outer clamp located onto the outside of the seat rail and the inner clamp on the inside of the seat rail.
4. Assemble the clamps together with allen screw and washer provided.
5. Adjust clamp assembly forward or rearward to desired position.
6. Install rigid clothing guard by inserting stem into clamp assembly.
7. Repeat steps for other side of chair.

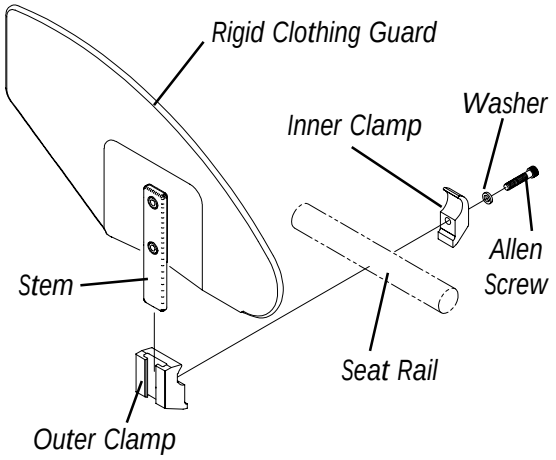


FIGURE 2 - RIGID CLOTHING GUARD REPLACEMENT

This Procedure includes the following:
Removing/Installing Rear Wheels
Adjusting Quick-Release Axle
Installing/Adjusting the Quad-Release Axle
Handrim Replacement
Repairing/Replacing Rear Wheel, Tire/Tube
Opening/Closing Clamps
Determining Toe In/Toe Out
Adjusting Toe In/Toe Out
Adjusting Rear Wheel Camber
Adjusting Wheelbase Length (Adjusting Center of Gravity)
Adjusting Wheelbase Width
Replacing Axle Tube
Front Caster Replacement
Adjusting Front Caster Height
Installing Quick-Release Casters
Wheel Lock Adjustment/Replacement

WARNING

After ANY adjustments, repair or service and BEFORE use, make sure all attaching hardware is tightened securely - otherwise injury or damage may result.

REMOVING/INSTALLING REAR WHEELS (FIGURE 1)

NOTE: If replacing the rear wheels with a different size than what was originally on the chair, the front caster height must also be changed to keep the chair frame parallel to the floor. Refer to ADJUSTING CASTER HEIGHT in this procedure of the manual. Anti-tipper height (if applicable) must also be adjusted to maintain 1/4 to 1/2-inch clearance between the bottom of the anti-tipper wheels and the floor. Refer to PROCEDURE 8 of this manual.

QUICK OR QUAD-RELEASE AXLES

1. Perform one (1) of the following:
   A. Push in the tip of the quick-release axle and pull the axle and wheel out of the axle mounting plate.
   B. Pull UP on the quad-release axle handle and pull the axle and wheel out of the axle mounting plate.
2. Repeat STEP 1 for the opposite rear wheel.
3. To reinstall the rear wheel onto the axle mounting plate, reverse STEPS 1-2.

WARNING

Make sure the detent pin and locking pins of the quick/quad-release axle are fully released BEFORE operating wheelchair.

The locking pins MUST be protruding past the inside of the rear wheel axle bushing for a positive lock.

Keep locking pins clean.

4. If the locking pins are not protruding past the inside of the axle bushing or there is too much movement of the rear wheel assembly in a back and forth motion, refer to ADJUSTING QUICK-RELEASE AXLES or ADJUSTING QUAD-RELEASE HANDLES in this procedure of the manual.

QUAD-RELEASE AXLE

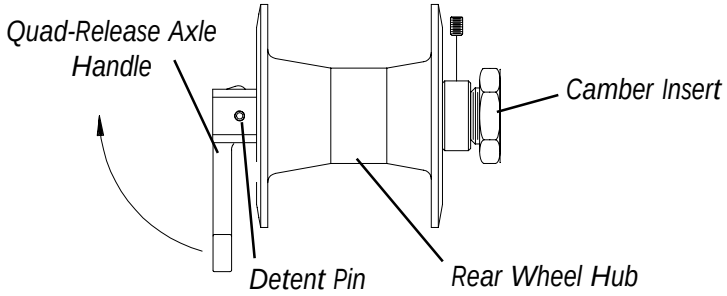


FIGURE 1 - REMOVING/INSTALLING REAR WHEELS

ADJUSTING QUICK-RELEASE AXLES (FIGURE 2)

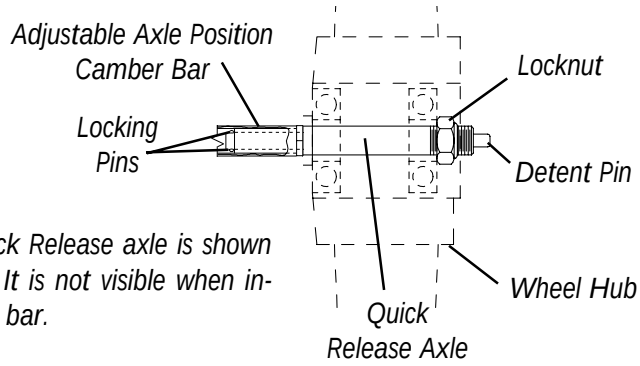
1. Remove rear wheel and quick-release axle from chair.
2. Depress detent pin in the quick-release axle and slide axle through the wheel hub.
3. Release detent pin ensuring that locking pins are fully released.
4. Increase or decrease end play by adjusting knurled locking collar or locknut on the end of the quick-release axle.

WARNING

Make sure detent pin and locking pins of the quick-release axles are fully released BEFORE operating the wheelchair.

Keep locking pins clean.

5. Reinstall rear wheel onto the chair.



NOTE: End of Quick Release axle is shown for reference only. It is not visible when inserted into camber bar.

FIGURE 2 - ADJUSTING QUICK-RELEASE AXLES

INSTALLING/ADJUSTING QUAD-RELEASE AXLES

INSTALLING (FIGURE 3)

1. Remove rear wheel and the existing quick-release axle from the chair.
2. Depress detent pin in the quick-release axle and slide the quick-release axle through the wheel hub.
3. Insert NEW quad-release axle through the rear wheel.
4. Turn the rear wheel over and slide the locking collar onto the quad-release axle and tighten securely.
5. Reinstall rear wheel and quad-release axle onto chair.
6. Flip the handle of the quad-release axle down to release the detent pin ensuring that the locking pins are fully released.

WARNING

Make sure detent pin and locking pins of the quick-release axles are fully released BEFORE operating the wheelchair.

Keep locking pins clean.

7. If any adjustments are needed, refer to ADJUSTING THE QUAD-RELEASE AXLE in this procedure of the manual.

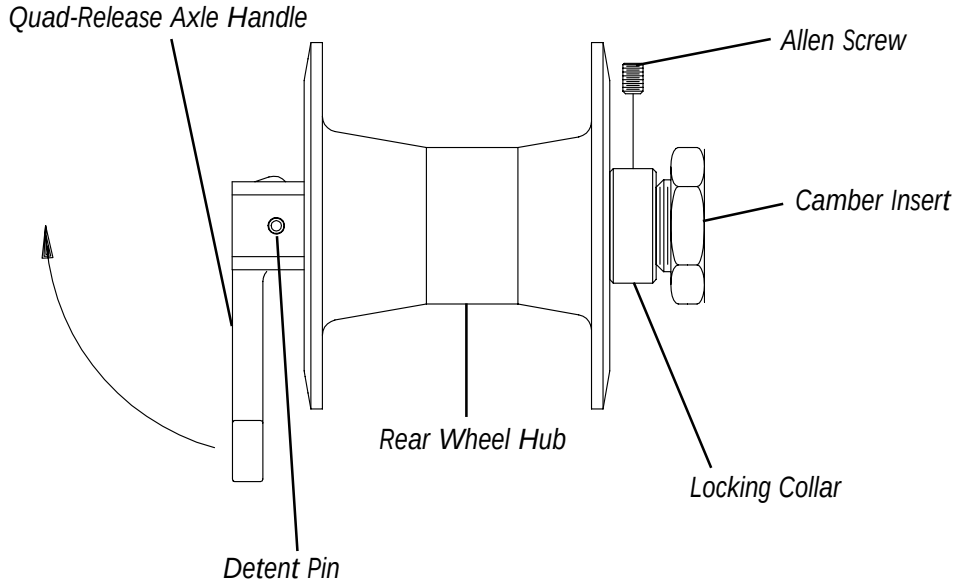


FIGURE 3 - INSTALLING QUAD-RELEASE AXLES

ADJUSTING (FIGURE 4)

Adjusting Quad-Release Handles In And/Or Out.

1. Remove rear wheel and quad-release axle from the chair, refer to REMOVING/INSTALLING THE REAR WHEELS in this procedure of the manual.
2. Loosen the locking screw.
3. Make the following adjustments if necessary:
   A. If the quad-release handle is not releasing the locking pins completely, rotate the quad-release handle approximately one-quarter (1/4) turn CLOCKWISE.
   B. If the quad-release handle hits the spokes of the rear wheel when assembled, rotate the quad-release handle approximately one-quarter (1/4) turn COUNTERCLOCKWISE.
4. Tighten the locking screw.
5. Reinstall rear wheel and quad-release axle onto the chair.

WARNING

Make sure detent pin of the quad-release axle is fully released BEFORE operating the wheelchair.

Keep locking pins clean.

6. Flip handle of the quad-release axle down to release the detent pin ensuring that the locking pins are fully released.
7. Repeat the above procedures until the quad-release axle locks correctly.

Removing Play From Rear Wheels.

1. With the rear wheel and quad-release axle still mounted onto the chair, make the following adjustment:
   A. Tighten length adjusting screw until there is no in and out movement of quad-release axle and rear wheel.

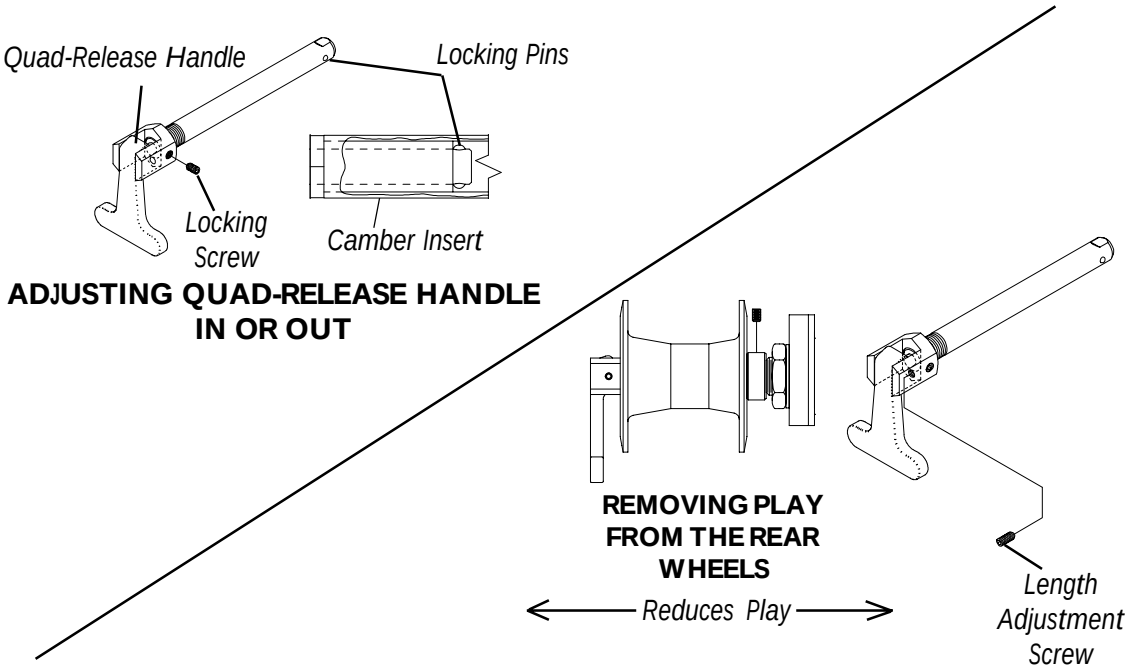


FIGURE 4 - ADJUSTING QUAD-RELEASE AXLES

HANDRIM REPLACEMENT (FIGURE 5)

1. Remove the rear wheel from the chair, refer to REMOVING/INSTALLING THE REAR WHEELS in this procedure of the manual.

WARNING

Tire MUST be deflated before any disassembly procedures are performed.

2. Remove all air from the tube by pressing down on the pin in the center of the valve stem.
3. While carefully holding the tire, tube and rim strip to one side, hold the allen screws and remove the locknuts that secure the handrim to the rear wheel.
4. Remove the existing handrim.
5. Install the NEW handrim by reversing the above procedures and proceed to STEP 6.

WARNING

DO NOT inflate tire until handrim is completely assembled.

6. Inflate the tire to the correct psi rating on the sidewall of the tire.

WARNING

Make sure the detent pin of the quick/quad-release axle is fully released BEFORE operating the wheelchair.

7. Reinstall rear wheel to the chair.
8. If the locking pins of the quick/quad-release axles are not protruding past the inside of the axle bushing or there is too much movement of the rear wheel assembly in a back and forth position, refer to ADJUSTING THE QUICK-RELEASE AXLE/REMOVING THE PLAY FROM THE REAR WHEELS in this procedure of the manual.
9. Repeat procedure for opposite rear wheel if necessary.

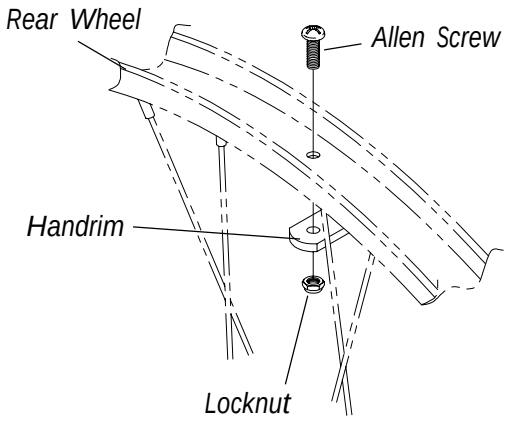


FIGURE 5 - HANDRIM REPLACEMENT

REPAIRING/REPLACING REAR WHEEL, TIRE/TUBE

WARNING

Replacement of the tire or tube MUST be performed by a qualified technician.

NOTE: If replacing the rear wheels with a different size than what was originally on the chair, the front caster height must also be changed to keep the chair frame parallel to the floor. Refer to ADJUSTING CASTER HEIGHT in this procedure of the manual. Anti-tipper height (if applicable) must also be adjusted to maintain 1/4 to 1/2-inch clearance between the bottom of the anti-tipper wheels and the floor. Refer to PROCEDURE 8 of this manual.

OPENING/CLOSING CLAMPS (FIGURE 6)

WARNING

QUICK RELEASE LEVERS - Make sure the quick-release levers are in the CLOSED position BEFORE using the wheelchair, otherwise personal injury or damage to the wheelchair may result.

STANDARD CAMBER CLAMPS - Make sure the hex screws and locknuts are securely tightened BEFORE using the wheelchair, otherwise personal injury or damage to the wheelchair may result.

CAUTION

A-4 CAMBER SYSTEM ONLY - DO NOT close the quick-release levers or tighten the hex screws and locknuts without camber inserts in the axle tube. Damage to the axle tube will occur.

1. Perform one (1) of the following to open a camber clamp:
   A. **QUICK-RELEASE LEVERS** - Pull the quick-release lever to the open position.
   B. **STANDARD CAMBER CLAMPS** - Loosen, but do not remove the hex screw and locknut on the camber clamp.
2. Perform one (1) of the following to close a camber clamp:
   A. **QUICK-RELEASE LEVERS** - Push the quick-release lever on the camber clamps to the closed position.
   B. **STANDARD CAMBER CLAMPS** - Securely tighten the hex screw and locknut to secure the axle tube.

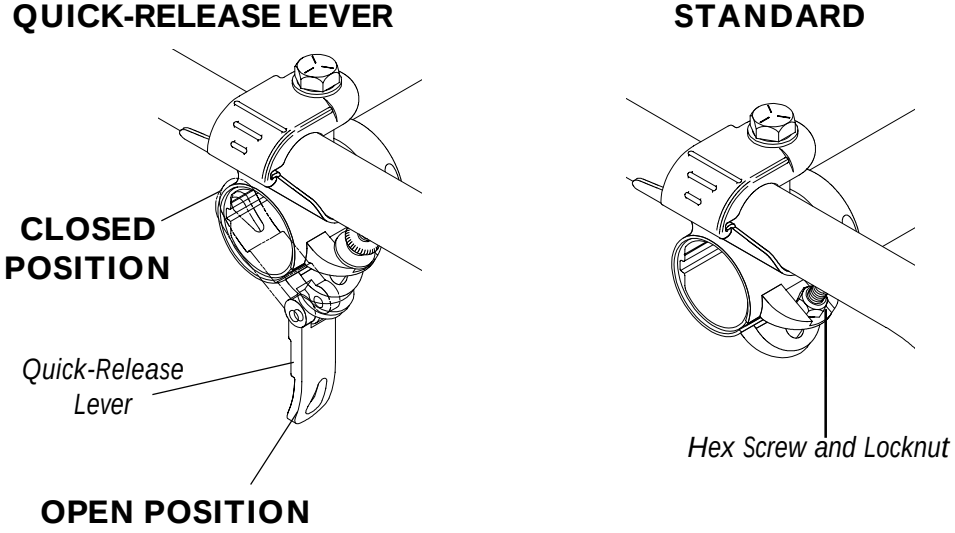


FIGURE 6 - OPENING/CLOSING CLAMPS

DETERMINING TOE IN/TOE OUT (FIGURE 7)

1. Inflate all pneumatic tires to recommended tire pressures (listed on the sidewall of the tire).
2. Measure the distance between the centerlines at the rear and front of the rear wheels at approximately 12-inches from the ground/floor (DETAIL "A").

NOTE: For optimum accuracy, perform STEP 2 with the wheelchair occupied.

3. Determine the difference between the two (2) measurements. If the **difference** between the **two (2) measurements** is **NOT** within **+1/8-inch**, one (1) of two (2) conditions exists:
   a. If the **back centerline measurement** of the rear wheels is **SMALLER** than the **front centerline measurement** of the rear wheels, a **TOE-OUT** condition exists (FIGURE 7).
   b. If the **back centerline measurement** of the rear wheels is **LARGER** than the **front centerline measurement** of the rear wheels, a **TOE-IN** condition exists (FIGURE 7).
4. If the difference between measurements is not within +1/8-inch, correct toe-in/toe-out condition. Refer to ADJUSTING TOE-IN/TOE-OUT in this procedure of the manual.

DETAIL "A" - MEASURING THE CENTERLINES

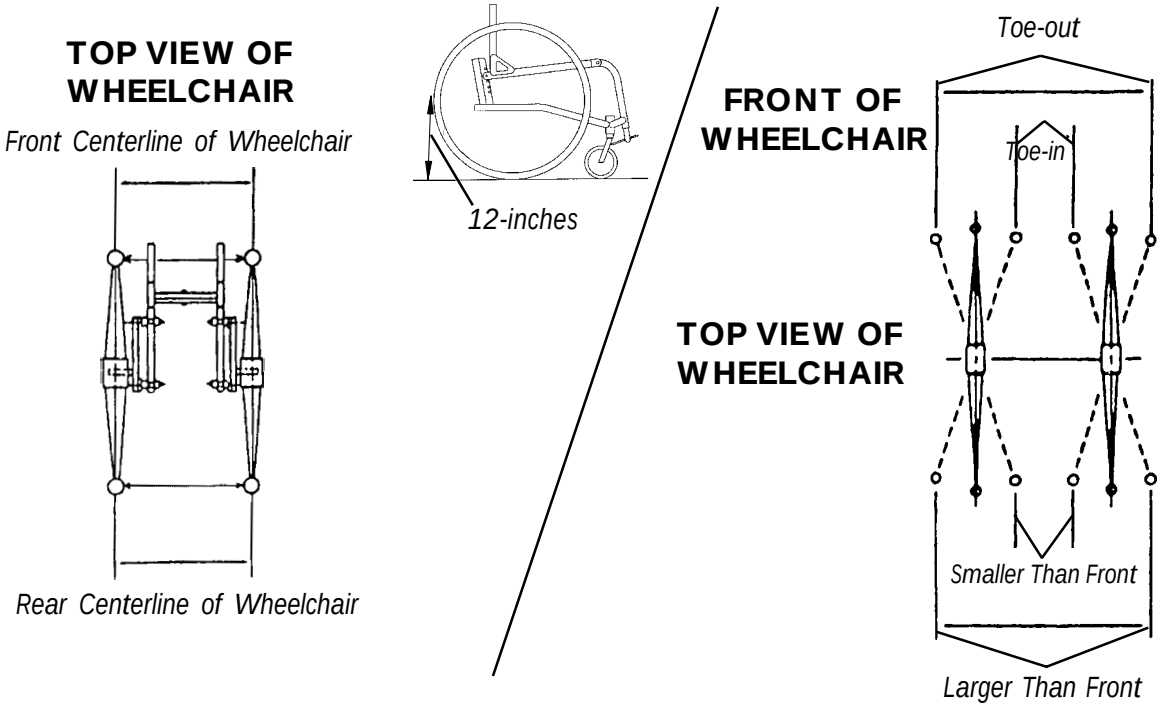


FIGURE 7 - DETERMINING TOE IN/TOE OUT

ADJUSTING TOE IN/TOE OUT

DEGREE OF CAMBER HAS BEEN CHANGED - T-3 ADJUSTABLE MODELS AND T-3 ELITE MODELS WITH ADJUSTABLE CAMBER TUBES ONLY

Axle Tube Positioning For 0°/3°, 0°/6°, 3°/6° Or 9°/12° Camber Inserts (FIGURE 8).

CAUTION

DO NOT rotate the axle tube if the axle tube is locked out by the toe adjustment rings. If a locked out axle tube is rotated, damage to the toe adjustment rings will occur.

NOTE: Refer to AXLE TUBE POSITIONING FOR 0°/3°, 0°/6°, 3°/6° or 9°/12° CAMBER INSERTS in FIGURE 8 for a description of a locked out axle tube.

There is NO adjustment required to maintain a correct toe in/toe out measurement.

NOTE: The axle tube will be locked out by the toe adjustment rings and will NOT rotate.

AXLE TUBE POSITIONING FOR 0°/3°, 0°/6°, 3°/6° OR 9°/12° CAMBER INSERTS

NO ADJUSTMENT REQUIRED

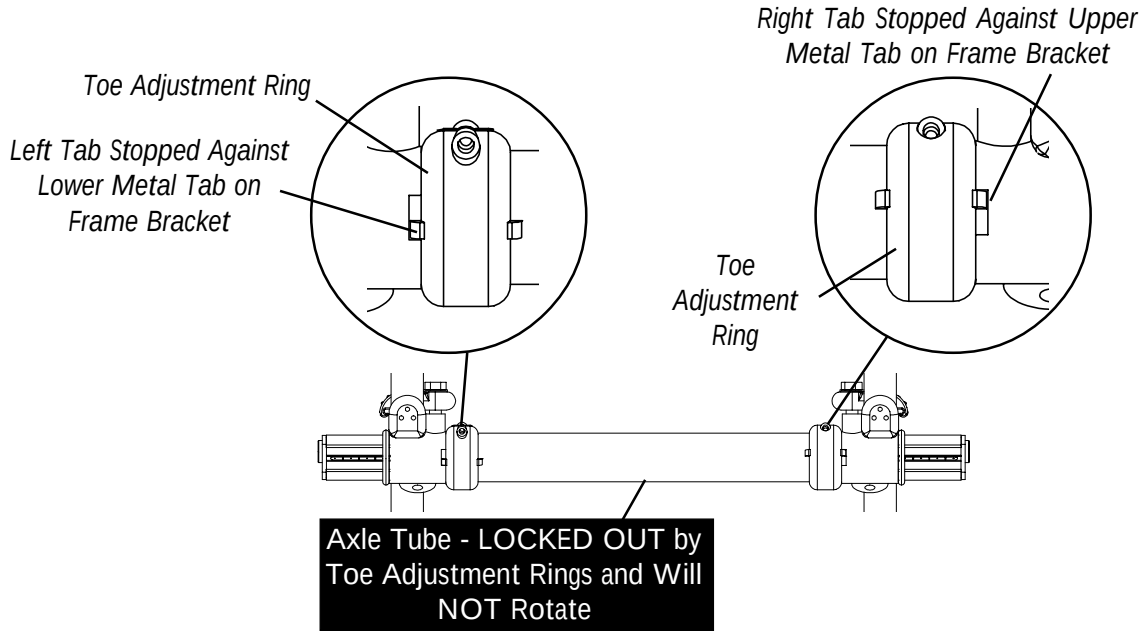

Right Tab Stopped Against Upper Metal Tab on Frame Bracket
Toe Adjustment Ring
Left Tab Stopped Against Lower Metal Tab on Frame Bracket
Toe Adjustment Ring
Axle Tube - LOCKED OUT by Toe Adjustment Rings and Will NOT Rotate

FIGURE 8 - ADJUSTING TOE IN/TOE OUT - DEGREE OF CAMBER HAS BEEN CHANGED

Axle Tube Positioning For 0°/9°, 0°/12°, 3°/9°, 6°/9° , 3°/12° Or 6°/12° Camber Inserts (FIGURE 9).

1. Open the camber clamps. Refer to OPENING/CLOSING CLAMPS in this procedure of the manual.
2. Slowly rotate the axle tube until the stop on the opposite toe adjustment ring is positioned at the opposite end of the frame bracket (approximately 1/8-inch).

WARNING

QUICK RELEASE LEVERS - Make sure the quick release levers are pointing towards the rear of the wheelchair and are in the CLOSED position BEFORE using the wheelchair, otherwise personal injury or damage to the wheelchair may result.

STANDARD - Make sure the hex screws and locknuts are securely tightened BEFORE using the wheelchair, otherwise personal injury or damage to the wheelchair may result.

3. Close the camber clamps. Refer to OPENING/CLOSING CLAMPS in this procedure of the manual.

AXLE TUBE POSITIONING FOR 0°/9°, 0°/12°, 3°/9°, 3°/12°, 6°/9° OR 6°/12° CAMBER INSERTS

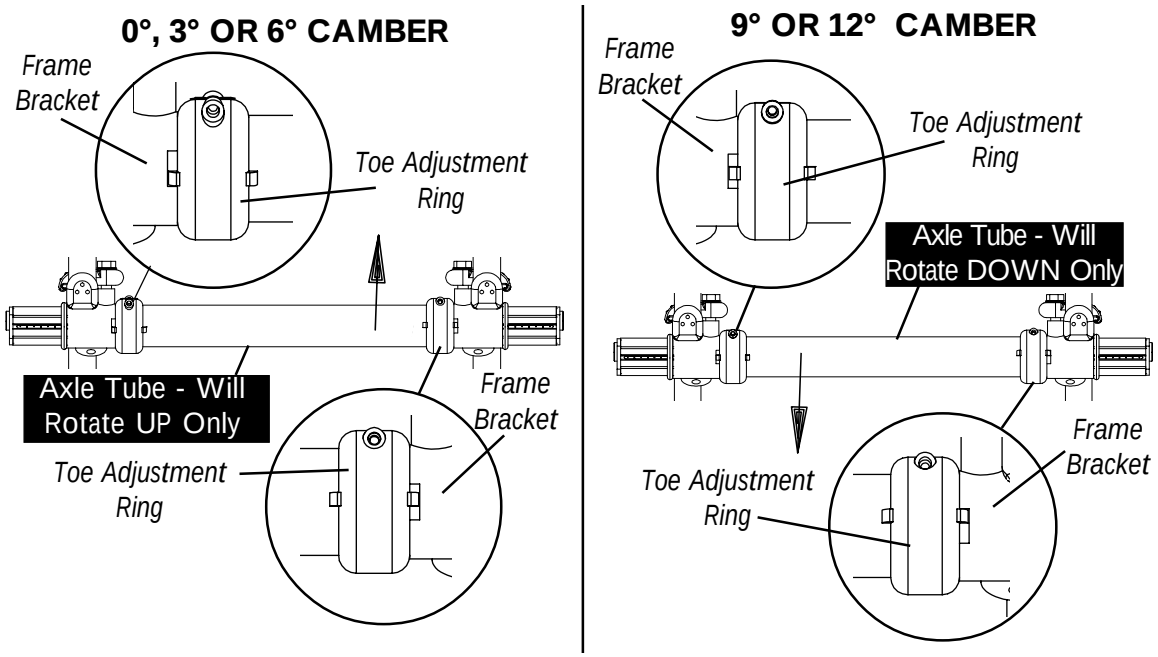


FIGURE 9 - ADJUSTING TOE IN/TOE OUT - DEGREE OF CAMBER HAS BEEN CHANGED

AXLE TUBE IS MOVED FROM FACTORY SET POSITION OR IS REPLACED - T-3 ADJUSTABLE MODELS AND T-3 ELITE MODELS WITH ADJUSTABLE CAMBER TUBES ONLY (FIGURE 10)

NOTE: Before performing this procedure, make sure the camber inserts are positioned to the lowest degree of camber. Refer to ADJUSTING REAR WHEEL CAMBER in this procedure of the manual.

1. Open the camber clamps. Refer to OPENING/CLOSING CLAMPS in this procedure of the manual.
2. Loosen the set screws that secure the toe adjustment rings to the axle tube.
3. Using an "L" square, rotate axle tube until flat edge of the camber insert is at a 90-degree angle with the ground/floor as shown in FIGURE 10.
4. Close the **Right** camber clamp. Refer to OPENING/CLOSING CLAMPS in this procedure of the manual.

NOTE: Do not close the left quick release lever or tighten the hex screw and locknut at this time.

5. Rotate the **Left** toe adjustment ring until the tab stops against the **Lower** metal tab on the frame bracket.
6. Securely tighten the set screw on the toe adjustment ring.
7. Measure distance between center lines at the rear and front of the rear wheels at approximately 12-inches from the ground/floor. Refer to DETERMINING TOE IN/TOE OUT in this procedure of the manual.
8. Repeat STEPS 1-6 until the toe in/toe out measurement is within +1/8-inch.
9. Reposition the camber insert for the highest degree of camber. Refer to ADJUSTING REAR WHEEL CAMBER in this procedure of the manual.
10. Close the **Left** camber clamp. Refer to OPENING/CLOSING CLAMPS in this procedure of the manual.
11. Open the **Right** camber clamp. Refer to OPENING/CLOSING CLAMPS in this procedure of the manual.
12. Repeat STEPS 3-8 for the **Right** side of the wheelchair.

WARNING

QUICK RELEASE LEVERS - Make sure the quick release levers are pointing towards the rear of the wheelchair and are in the CLOSED position BEFORE using the wheelchair, otherwise personal injury or damage to the wheelchair may result.

STANDARD - Make sure the hex screws and locknuts are securely tightened BEFORE using the wheelchair, otherwise personal injury or damage to the wheelchair may result.

13. Make sure the quick release levers or hex screws and locknuts are securely tightened.

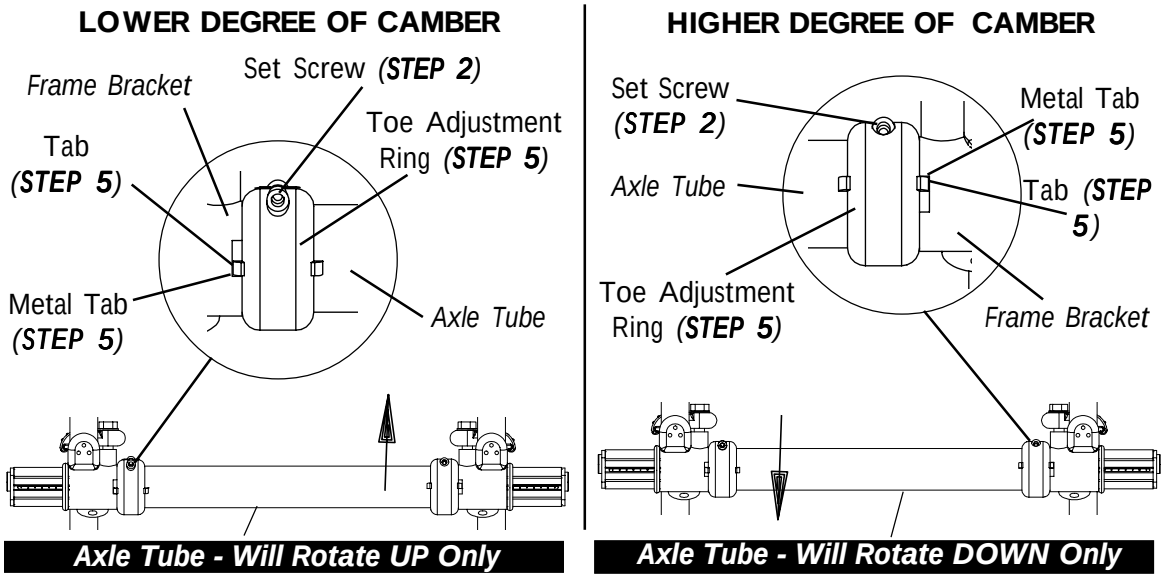


FIGURE 10 - ADJUSTING TOE IN/TOE OUT - AXLE TUBE IS MOVED FROM FACTORY SET POSITION OR IS REPLACED

T-3 ELITE AND T-4 MODELS WITH FIXED CAMBER (FIGURE 11)

1. Loosen the set screw that secures the camber insert to the camber tube.
2. Using an "L" square, rotate the camber insert until the flat edge of the camber insert is at a 90-degree angle with the ground/floor as shown in FIGURE 11.
3. Tighten the set screw that secures the camber insert to the camber tube securely.
4. Repeat STEPS 1-3 for the opposite camber insert.

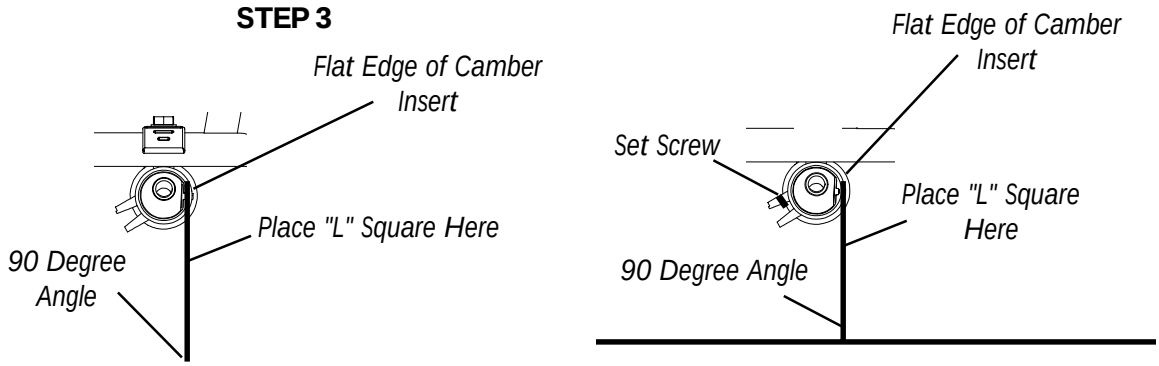


FIGURE 11 - ADJUSTING TOE IN/TOE OUT - T-3 ELITE MODELS WITH FIXED CAMBER

ADJUSTING REAR WHEEL CAMBER (FIGURE 12)

NOTE: Perform this procedure one (1) side of the wheelchair at a time for ease of adjustment.

1. Open the camber clamp. Refer to OPENING/CLOSING CLAMPS in this procedure of the manual.
2. Pull one (1) rear wheel with the camber insert out of the axle tube.
3. Remove the rear wheel from the camber insert.
4. Rotate the camber insert 180°.
5. Reinstall the rear wheel into the camber insert.

WARNING

NEVER position the camber inserts in the axle tube with more than 3-inches (12 indexing marks showing) of the camber insert outside of the axle tube. The camber inserts will not be securely tightened in the axle tube resulting in possible injury to the user or damage to the wheelchair.

6. Position the camber insert to desired position. Make sure there is no more than 3-inches (12 indexing marks) of the camber inserts outside of the axle tube.
7. Slide the indexing ring on the camber insert until it is flush with the frame bracket.

NOTE: Before using the wheelchair, make sure both camber inserts are set to the same indexing mark. This will make sure the distance between the rear wheel and the wheelchair is the same on both sides.

8. **Wheelchairs equipped with 0°/9°, 0°/12°, 3°/9°, 6°/9° , 3°/12° or 6°/12° camber inserts -** adjust the toe in/toe out of the wheelchair. Refer to ADJUSTING TOE IN TOE OUT - DEGREE OF CAMBER HAS BEEN CHANGED in this procedure of the manual.

WARNING

QUICK RELEASE LEVERS - Make sure the quick-release levers are pointing towards the rear of the wheelchair and are in the CLOSED position BEFORE using the wheelchair, otherwise personal injury or damage to the wheelchair may result.

STANDARD - Make sure the hex screws and locknuts are securely tightened BEFORE using the wheelchair, otherwise personal injury or damage to the wheelchair may result.

9. Close the camber clamp. Refer to OPENING/CLOSING CLAMPS in this procedure of the manual.
10. Repeat STEPS 1-9 for the opposite side of the wheelchair.

WARNING

Make sure the detent pin and locking pins of the quick/quad-release axle are fully released BEFORE operating the wheelchair.

The locking pins MUST be protruding past the inside of the rear wheel axle bushing for a positive lock.

Keep locking pins clean.

11. If the locking pins of the quick/quad-release axles are not protruding past the inside of the axle bushing or there is too much movement of the rear wheel assembly in a back and forth position, refer to ADJUSTING QUICK-RELEASE AXLES or REMOVING THE PLAY FROM THE REAR WHEELS in this procedure of the manual.
12. Refer to the following chart to determine if it will be necessary to adjust the toe in/toe out of the wheelchair.

Camber Insert Degree Range	Adjustment Required
0 and 3, 0 and 6, 3 and 6, 9 and 12	NO
0 and 9, 0 and 12, 3 and 9 3 and 12, 6 and 9, 6 and 12	* YES

* Refer to ADJUSTING TOE IN/TOE OUT in this procedure of the manual.

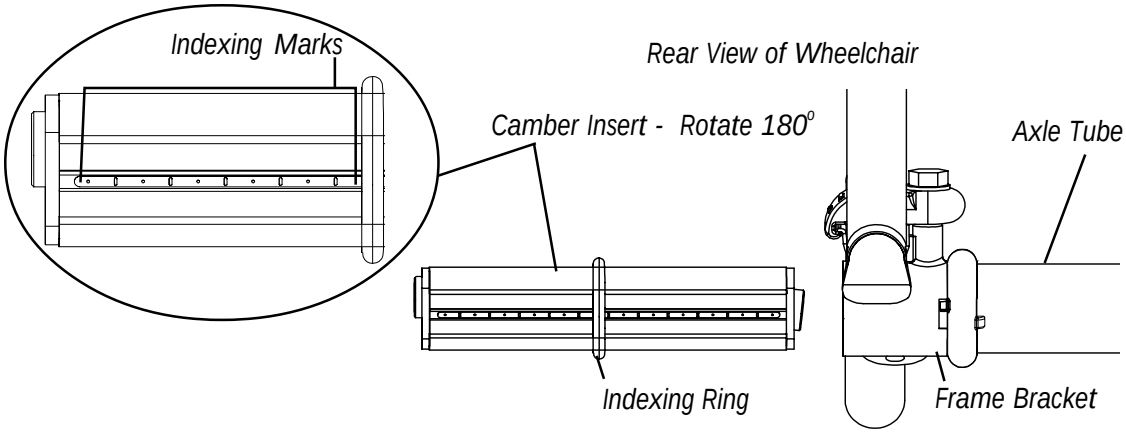


FIGURE 12 - REPOSITIONING CAMBER INSERTS (ADJUSTING REAR WHEEL CAMBER)

ADJUSTING WHEELBASE LENGTH (ADJUSTING CENTER OF GRAVITY) (FIGURE 13)

NOTE: This procedure is for T-3 Adjustable models and T-3 Elite models with adjustable camber tubes ONLY.

WARNING

The position of the footrest, camber tube, seat height, the tautness of the back upholstery, as well as the user's condition are directly related to the chair's stability. Any change to one (1) or any combination of the five (5) may cause the chair to decrease in stability. Use EXTREME caution when using a new seating position.

NOTE: The camber tube is always mounted to the BOTTOM of the wheelchair frame.

1. Loosen, but do not remove the two (2) hex screws that secure the axle tube to the wheelchair frame.
2. Position the frame brackets on the wheelchair frame at the desired position.

   LENGTHENING THE WHEELBASE will increase the stability and maintain standard maneuverability of the wheelchair.

   SHORTENING THE WHEELBASE will increase the maneuverability and distribute additional weight onto the rear wheels.

NOTE: The performance of the wheelchair will be affected if the frame brackets do not sit flush on the wheelchair frame.

3. Securely tighten one (1) hex screw that secures the camber tube to the wheelchair frame.

NOTE: Securely tightening one (1) hex screw at a time ensures that the frame brackets will sit flush on the wheelchair frame.

4. Repeat STEP 3 for the opposite side of the wheelchair.

NOTE: The distance between the back cane and the back of the top clamp on each side of the wheelchair can be measured as an additional check to make sure the frame brackets sit flush on the wheelchair frame (the measurements should be the same). Refer to DETAIL "A" of FIGURE 13.

5. Roll the wheelchair before using to make sure there is no excessive drag to either side.

NOTE: If drag or pulling to either side occurs, refer to DETERMINING TOE IN/TOE OUT in this procedure of the manual.

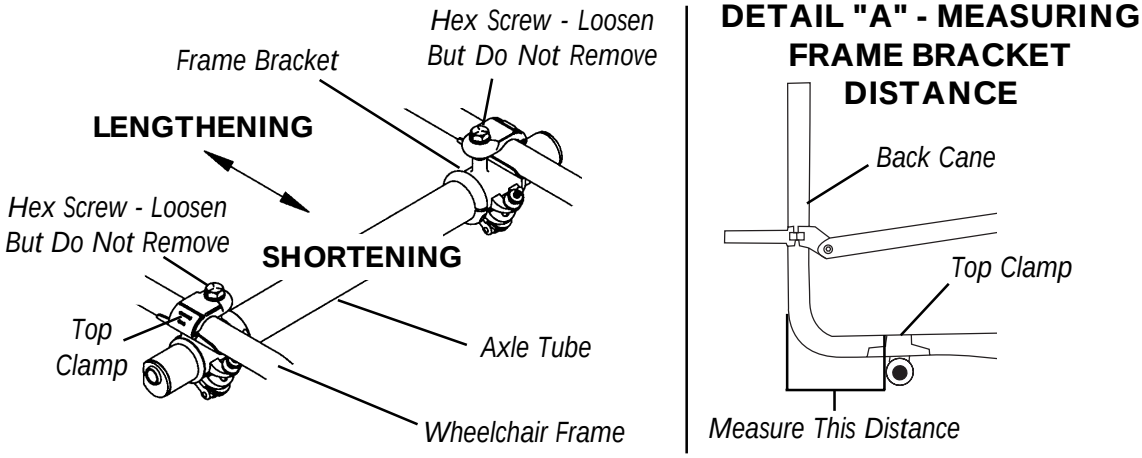


FIGURE 13 - ADJUSTING WHEELBASE LENGTH (ADJUSTING CENTER OF GRAVITY)

ADJUSTING WHEELBASE WIDTH (FIGURE 14)

ADJUSTING WHEELBASE WIDTH - A-4 CAMBER TUBE

NOTE: Perform this procedure one (1) side of the wheelchair at a time for ease of adjustment.

1. Open the camber clamps. Refer to OPENING/CLOSING CLAMPS in this procedure of the manual.

WARNING

NEVER position the camber inserts in the axle tube with more than 3-inches (12 indexing marks showing) of the camber insert outside of the axle tube. The camber inserts will not be securely tightened in the axle tube resulting in possible injury to the user or damage to the wheelchair.

2. Position the camber insert to the desired position. Make sure there is no more than 3-inches (12 indexing marks showing) of the camber inserts outside of the axle tube.
3. Slide the indexing ring on the camber insert until it is flush with the frame bracket.

NOTE: Before using the wheelchair, make sure both camber inserts are set at the same indexing mark. This will make sure the distance between the rear wheel and the wheelchair is the same on both sides.

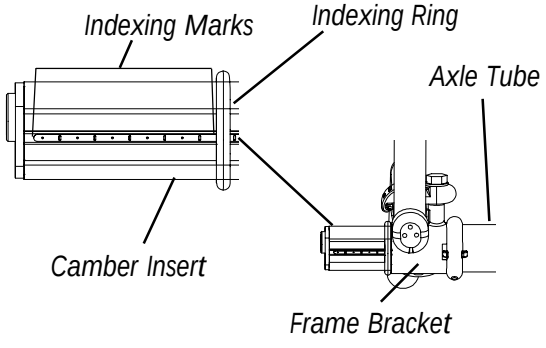
WARNING

QUICK RELEASE LEVERS - Make sure the quick release levers are pointing towards the rear of the wheelchair and is in the CLOSED position BEFORE using the wheelchair, otherwise personal injury or damage to the wheelchair may result.

STANDARD - Make sure the hex screws and locknuts are securely tightened BEFORE using the wheelchair, otherwise personal injury or damage to the wheelchair may result.

4. Close the camber clamps. Refer to OPENING/CLOSING CLAMPS in this procedure of the manual.
5. Repeat STEPS 1-4 for the opposite side of the wheelchair.

A-4 CAMBER TUBE



CAMBER TUBE 2000

NOTE: Axle bolt removed from axle tube for clarity. It is not necessary to remove the axle bolt for this procedure.

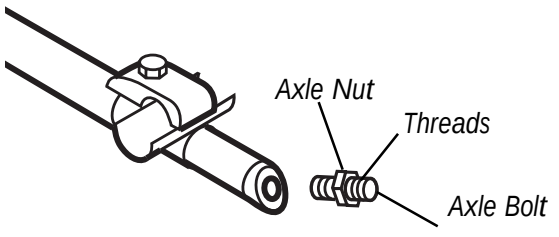


FIGURE 14 - ADJUSTING WHEELBASE WIDTH

ADJUSTING WHEELBASE WIDTH - CAMBER TUBE 2000

NOTE: The wheelbase width can be increased/decreased by 1-inch.

1. Remove the rear wheels. Refer to REMOVING/INSTALLING REAR WHEELS in this procedure of the manual.
2. Torque the axle nut to increase/decrease the wheelbase width.
3. Count the number of threads showing on the axle bolt.

NOTE: The number of threads showing on the axle bolt should be equal on both sides of the wheelchair. Otherwise, wheelchair performance may be affected.

4. Repeat STEPS 2-3 for the opposite axle nut and axle bolt.

REPLACING AXLE TUBE (FIGURE 15)

NOTE: The camber tube is always mounted to the BOTTOM of the wheelchair frame.

NOTE: There is no need to remove the two (2) frame brackets when replacing the axle tube.

1. A-4 CAMBER TUBE ONLY - Note the position of the camber inserts so they can be installed to the original position in the new axle tube.
2. Open the camber clamps. Refer to OPENING/CLOSING CLAMPS in this procedure of the manual.
3. Remove the two (2) rear wheels. Refer to REMOVING/INSTALLING REAR WHEELS in this procedure of the manual.
4. A-4 CAMBER TUBE ONLY - Remove the camber inserts positioned in the axle tube.
5. A-4 CAMBER TUBE ONLY - Loosen, but do not remove the two (2) set screws that secure the toe adjustment rings to the axle tube.
6. Pull the existing axle tube through one (1) of the frame brackets.
7. A-4 CAMBER TUBE ONLY - Remove the toe adjustment rings from the existing axle tube.
8. Pull the existing axle tube through the other frame bracket and remove from the wheelchair.
9. Slide the new axle tube through one (1) of the frame brackets.

NOTE: A-4 CAMBER TUBE ONLY - Make sure the notches in the axle tube are towards the rear of the wheelchair and the slots in the axle tube are facing up.

10. A-4 CAMBER TUBE ONLY - Install the toe adjustment rings onto the new axle tube. Make sure the stops on the toe adjustment rings are facing towards the outside of the wheelchair.

NOTE: Do not tighten the set screws that secure the toe adjustment rings to the axle tube at this time.

11. Slide the new axle tube through the other camber clamps until the axle tube is evenly spaced between the camber clamps.

NOTE: Do not close the camber clamps at this time.

WARNING

A-4 CAMBER TUBE ONLY - NEVER position the camber inserts in the axle tube with more than 3-inches (12 indexing marks showing) of the camber insert outside of the axle tube. The camber inserts will not be securely tightened in the axle tube resulting in possible injury to the user or damage to the wheelchair.

12. A-4 CAMBER TUBE ONLY - Install the camber inserts into the new axle tube and slide the camber inserts to the position noted in STEP 1. Make sure there is no more than 3-inches (12 indexing marks) of the camber inserts outside of the axle tube.
13. A-4 CAMBER TUBE ONLY - Slide the indexing ring on the camber insert until it is flush with the frame bracket.

NOTE: To maximize rollability: Before using the wheelchair, make sure both camber inserts are set to the same indexing notch. This will make sure the distance between the rear wheel and the wheelchair is the same on both sides.

14. Install the rear wheels onto the wheelchair. Refer to REMOVING/INSTALLING REAR WHEELS in this procedure of the manual.
15. Determine the toe in/toe out of the wheelchair. Refer to DETERMINING TOE IN/TOE OUT in this procedure of the manual.

NOTE: The performance of the wheelchair will be affected if the toe in/toe out of the wheelchair is not correct.

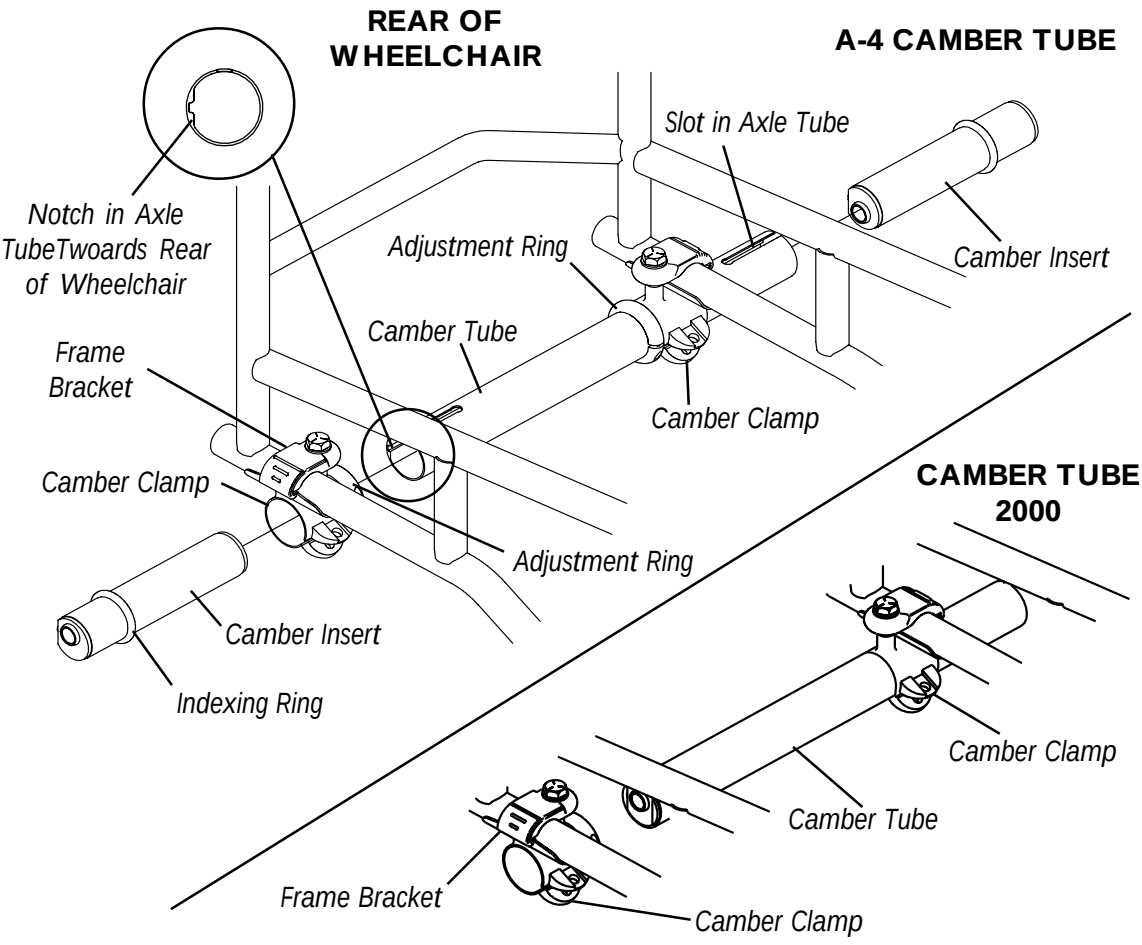


FIGURE 15 - REPLACING AXLE TUBE

FRONT CASTER REPLACEMENT (FIGURE 17)

1. Remove the bolt and locknut that secure the front caster to the mounting fork.
2. Remove the front caster and axle spacers from the mounting fork.
3. Install the NEW front caster and spacers onto the mounting fork and securely tighten.
4. Repeat the procedure for the opposite front caster if necessary.

NOTE: If replacing front casters with a different size than what was originally on the chair, the front caster height MUST be adjusted to keep the chair frame parallel to the floor. Refer to ADJUSTING FRONT CASTER HEIGHT in this procedure of the manual.

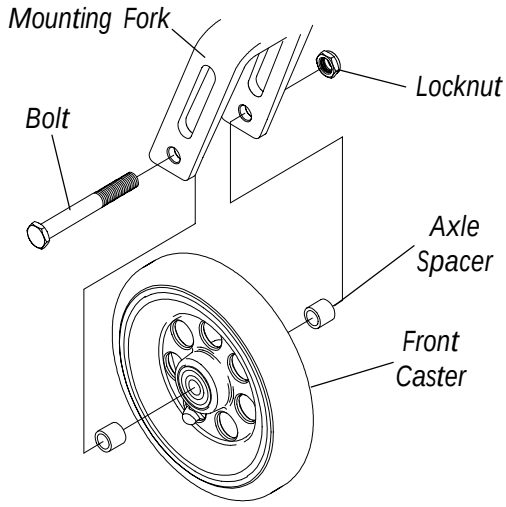


FIGURE 17 - FRONT CASTER REPLACEMENT

ADJUSTING FRONT CASTER HEIGHT (FIGURE 18)

NOTE: When changing a rear wheel to a different size, it becomes necessary to adjust the front caster height so the chair frame will remain parallel to the floor.

1. Place the wheelchair on a flat surface.
2. Remove the dust cover on the fork assembly.
3. Remove the locknut that secures the front caster fork to the chair frame.
4. Position a large right triangle or "L" square on the flat surface and against the caster housing that is welded to the chair frame.

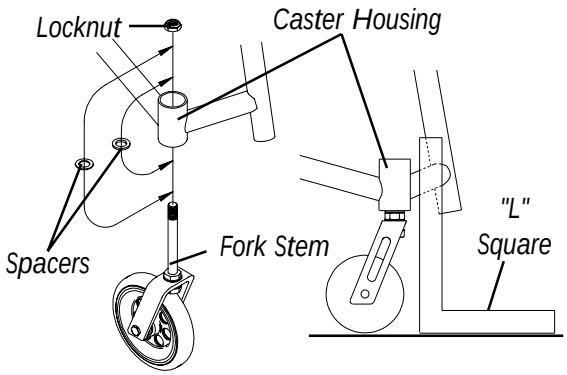


FIGURE 18 - ADJUSTING FRONT CASTER HEIGHT

5. Adjust the height of the front casters by either adding or removing spacers on top of the fork stem until the chair frame is parallel with the floor.
6. Reinstall the locknut and dust cover onto the chair.

NOTE: A 1/4-inch and 1/2-inch spacer are provided, however, it is possible that smaller washers may be required to fine tune the caster height.

INSTALLING QUICK-RELEASE CASTERS (FIGURE 19)

NOTE: This procedure applies to T-3 Elite models ONLY.

WARNING

Pull on quick-release casters each time BEFORE using the wheelchair to make sure they are securely locked onto the wheelchair frame.

There are several configurations of the quick-release caster. If caster fork stem DOES NOT look like the drawing in FIGURE 19 when installed, DO NOT USE. Contact Invacare Top End, 1-(800) 532-8677.

A NOTE ABOUT QUICK-RELEASE CASTERS

Quick-release casters are an option that allow for quick and easy removal of the casters from the wheelchair so the wheelchair can be stored and transported conveniently. When using the quick-release caster option, a spring loaded caster head tube cap will be used instead of a stem nut to secure the front caster to the chair frame. Unlike the stem nut, the caster head tube cap is not adjustable and thus caster flutter will be more evident with the quick-release caster option than it would be with the standard caster attaching hardware.

1. Remove the bolt and locknut that secure the front caster and the two (2) spacers to the fork.
2. Remove the dust cover on the top of the head tube.
3. While holding the fork and using a socket wrench, remove the locknut that secures the fork, and spacer in the headtube of the wheelchair.

NOTE: The dust cover and locknut are not used with the quick-release casters. Keep them for future use.

4. Remove the existing fork and install the quick-release caster fork through the head tube of the wheelchair making sure the fork stem is approximately 1/4-inch above the caster head tube.

WARNING

Make sure the detent pin of the quick-release caster headtube cap is fully released BEFORE operating the wheelchair.

5. Depress the detent pin of the quick-release caster headtube cap and install over the top of the quick-release caster fork stem.
6. Release the detent pin of the quick-release caster headtube cap and pull on the fork to make sure the fork is securely attached to the wheelchair.
7. Reinstall the two (2) spacers and caster onto the quick-release caster fork.
8. Repeat this procedure for the opposite side.

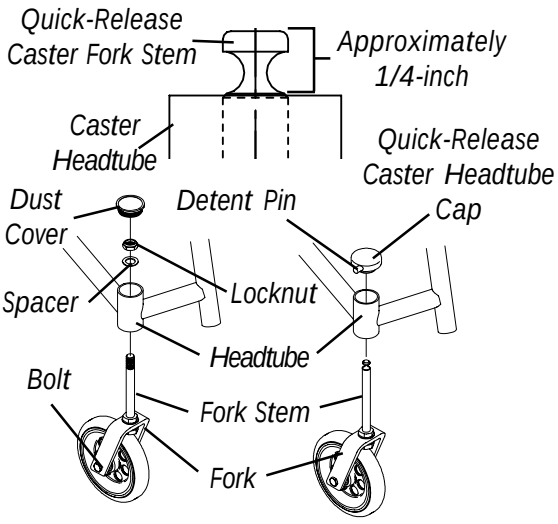


FIGURE 19 - INSTALLING QUICK-RELEASE CASTERS

WHEEL LOCK ADJUSTMENT/REPLACEMENT (FIGURE 20)

NOTE: Performance chairs with camber may encounter difficulty if installing LOW Mount wheel locks when engaging in any contact sport. Before adjusting or replacing the High/Low mount wheel locks, ensure that the tires are inflated to the recommended psi on the sidewall of the tire.

1. Loosen the locknuts or hex screw(s) that secure the High/Low mount wheel locks to the side frame.

REPLACING THE HIGH/LOW MOUNT WHEEL LOCK

1. Remove the locknuts or hex screws and remove the existing wheel lock from the chair.
2. Install the NEW wheel lock.

ADJUSTING THE HIGH/LOW MOUNT WHEEL LOCKS

1. Securely tighten the locknuts or hex screws that secure the High/Low mount wheel lock to the chair frame and engage the wheel lock.

NOTE: Any wheel lock adjustment should embed the wheel lock shoe at least 3/16-inch into the tire when engaged.

2. Adjust position of the wheel locks until the 3/16-inch measurement is obtained for correct wheel lock adjustment.
3. Engage the wheel locks and push against the chair and determine if the wheel locks engage the wheel enough to hold the chair.
4. Repeat the above procedures until the wheel locks hold the chair.

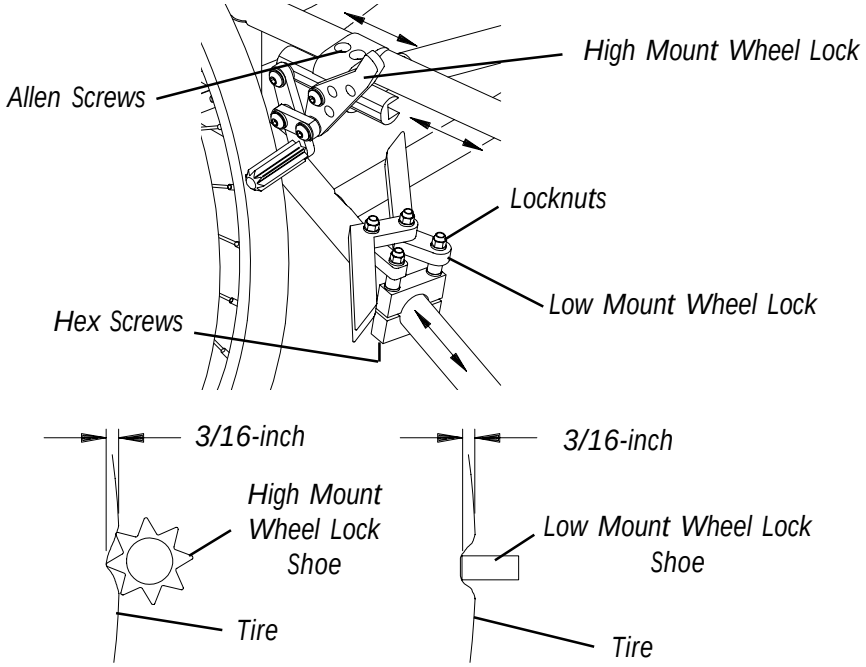


FIGURE 20 - WHEEL LOCK ADJUSTMENT/REPLACEMENT

This Procedure includes the following:
Installing/Using/Adjusting the Fixed Footrest - After 4/2000
T-3 Tennis Elite Individual Footplates - Before 4/2000
T-3 Tennis Adjustable Footrest System - Before 4/2000

WARNING

After ANY adjustments, repair or service and BEFORE use, make sure all attaching hardware is tightened securely - otherwise injury or damage may result.

INSTALLING/USING/ADJUSTING THE FIXED FOOTREST - AFTER 4/2000 (FIGURE 1)

WARNING

Feet MUST be secured into the fixed footrest BEFORE using wheelchair. Otherwise, injury or damage may occur.

INSTALLING/USING FOOTREST - T-3 ELITE, T-3 ADJUSTABLE, T-3 TITANIUM

1. Remove the hex screws from the mounting bracket.
2. Position the upper support tube on the underside of the wheelchair frame.
3. Position the mounting bracket on top of the wheel chair frame.
4. Install the hex screws to secure the mounting bracket to the upper support tube.
5. If necessary, adjust footrest. Refer to ADJUSTING FOOTREST in this procedure.
6. Pull the buckle out to release foot strap.
7. Place feet onto footrests.
8. Pull end of foot strap to tighten.
9. Close buckle to secure foot strap and feet to footplate.
10. Secure ankles by wrapping ankle strap around lower support tube and ankles.

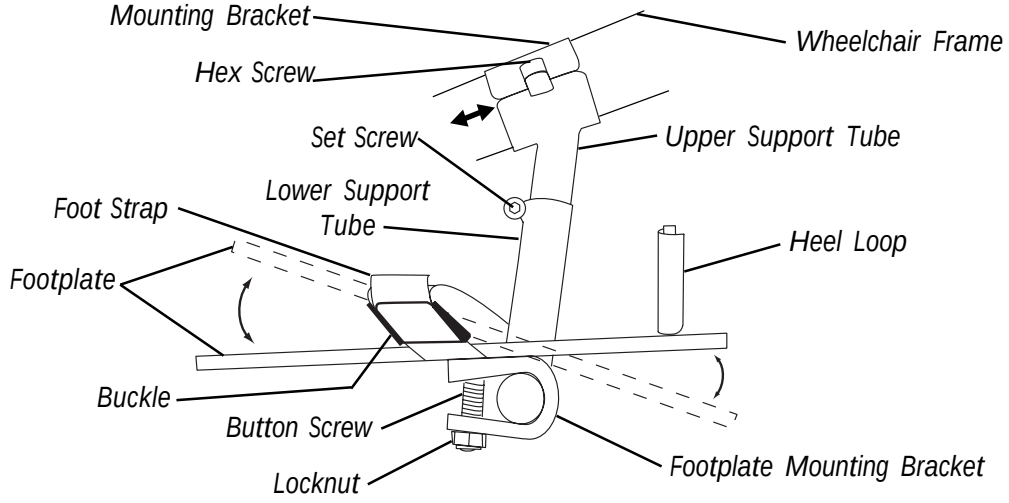


FIGURE 1 - INSTALLING/USING/ADJUSTING THE FIXED FOOTREST

INSTALLING/USING FOOTREST - T-4 ELITE AND T-4 TITANIUM

1. Remove the hex screws from the mounting bracket.
2. Position the upper support tube on the underside of the wheelchair frame.
3. Position the mounting bracket on top of the wheelchair frame.
4. Install the hex screws to secure the mounting bracket to the wheelchair frame.
5. Repeat STEPS 1-4 to attach the upper support tube and mounting bracket to the other side of the wheelchair.
6. Attach the single plate footrest/lower support tube attachment to the upper support tubes.
7. Tighten the set screws.
8. If necessry, adjust footrest. Refer to ADJUSTING FOOTREST in this procedure.

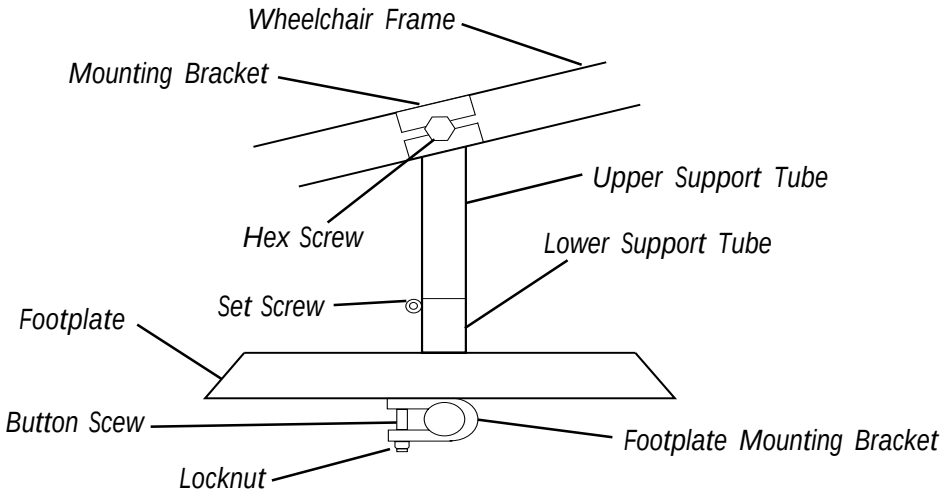


FIGURE 2 - INSTALLING/USING FOOTREST - T-4 ELITE AND T-4 TITANIUM

ADJUSTING FOOTREST

Position.

1. Loosen the hex screws on the mounting bracket.
2. Slide the footrest assembly along the frame to the desired position.
3. Tighten the hex screws on the mounting bracket.

Height.

1. Loosen the set screw securing the upper and lower footrest support tubes.
2. Reposition the footrest up or down as desired.
3. Tighten the set screw to secure the upper and lower footrest support tubes.

Angle.

1. Loosen the locknuts securing the footplate mounting bracket.
2. Adjust the angle of the footplate as desired.
3. Tighten the locknuts securing the footplate mounting bracket.

Depth.

1. Remove the locknuts and button screws securing the footplate mounting bracket.
2. Reposition the footplate to the desired set of mounting holes.
3. Install the button screws through the footplate, footstrap and footplate mounting bracket.
4. Secure the button screws with the locknuts. Tighten securely.

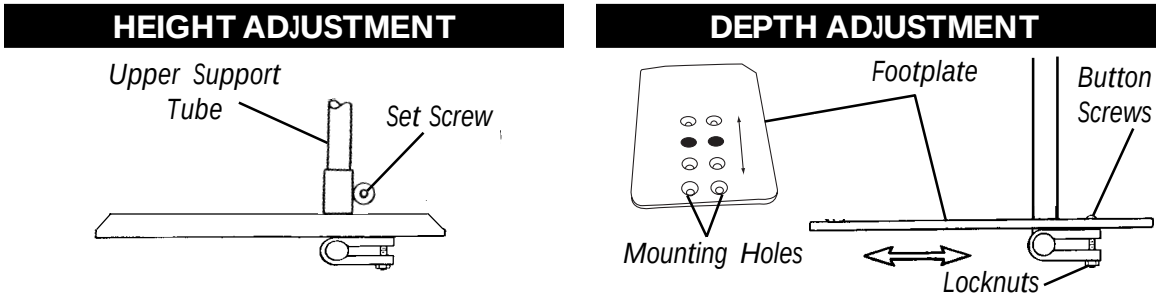


FIGURE 3 - ADJUSTING THE FIXED FOOTREST

T-3 TENNIS ELITE INDIVIDUAL FOOTPLATES - BEFORE 4/2000 (FIGURES 2 AND 3)

WARNING

The position of the footrest, camber tube, seat height, the tautness of the back upholstery, as well as the user's condition are directly related to the chair's stability. Any change to one (1) or any combination of the five (5) may cause the chair to decrease in stability. Use EXTREME caution when using a new seating position.

CHANGING FOOTPLATE ANGLE

1. Loosen, but do not remove the button screws and locknuts that secure the footplates to the footplate system mounting bracket.
2. Adjust the footplate to the desired angle for the user.
3. Tighten the button screws and locknuts that secure the footplates to the footplate system mounting bracket securely.
4. Repeat STEPS 1-3 for the opposite footplate, if necessary.

CHANGING FOOTPLATE DEPTH

Repositioning Footplate.

1. Remove the button screws and locknuts that secure the footplate and footplate clamp to the footplate system mounting clamp.
2. Adjust the footrest to the desired depth for the user.
3. Line up the mounting holes in the footplate and footplate clamp.
4. Reinstall the button screws and locknuts that secure the footplate and footplate clamp to the footplate system mounting clamp and tighten securely.
5. Repeat STEPS 1-5 for the opposite footplate, if necessary.

Repositioning Footplate Mounting Bracket.

1. Remove the button screws and locknuts that secure the footplate mounting bracket to the chair frame.
2. Move the footplate mounting bracket to the desired position for the user.
3. Reinstall the button screws and locknuts that secure the footplate mounting bracket to the chair frame and tighten securely.

CHANGING FOOTPLATE HEIGHT

1. Remove the button screws and locknuts that secure the fooplate system mounting clamp to the footplate mounting bracket.
2. Position the footplate system mounting clamp on the footplate mounting bracket at the desired height for the user.
3. Reinstall the button screws and locknuts that secure the fooplate system mounting clamp to the footplate mounting bracket and tighten securely.
4. Repeat STEPS 1-3 for the opposite footplate, if necessary.

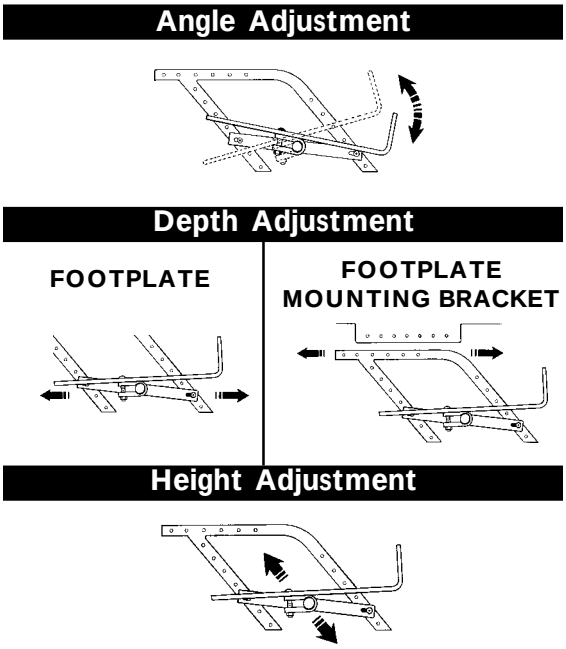


FIGURE 4 - T-3 TENNIS ELITE INDIVIDUAL FOOTPLATES - BEFORE 4/2000

REMOVING FOOTPLATE(S)

1. Note the depth and angle of the existing footplates.
2. Remove the button screws and locknuts that secure the footplate and footplate clamp to the footplate system mounting clamp.
3. Slide the existing footplate and footplate clamp off of the footplate system mounting clamp.
4. If necessary, repeat STEPS 1-3 for the opposite footplate.

INSTALLING FOOTPLATE(S)

1. Install the existing fooplate clamp onto the footplate system mounting clamp.
2. Line up the mounting holes in the new/existing footplate noted in REMOVING FOOTPLATE(S) with the mounting holes in the footplate clamp.
3. Install the button screws and locknuts that secure the new/existing footplate and footplate clamp to the footplate system mounting clamp and loosely tighten.
4. Position the footplate angle to the angle noted in REMOVING FOOTPLATE(S) and tighten the button screws and locknuts securely.
5. If necessary, repaet STEPS 1-4 for the opposite footplate.

REMOVING FOOTPLATE SYSTEM MOUNTING CLAMP

1. Note the mounting position of the footplate system mounting clamp.
2. Remove footplates. Refer to REMOVING FOOT-PLATE(S) in this procedure of the manual.

NOTE: If replacing the footplate mounting bracket, it is not necessary to remove the footplates

3. Remove the button screws and locknuts that secure the existing footplate system mounting clamp to the footplate mounting bracket.
4. Remove the existing footplate system mounting clamp from the wheelchair.

REPLACING FOOTPLATE MOUNTING BRACKET

1. Remove the footplate system mounting clamp. Refer to REMOVING FOOTPLATE SYSTEM MOUNTING CLAMP in this procedure of the manual.
2. Note the mounting position of the existing footplate mounting bracket.
3. Remove the button screws and locknuts that secure the existing footplate mounting bracket to the chair.
4. Remove the existing footplate mounting bracket from the chair.
5. Install the new footplate mounting bracket on the chair at the position noted in STEP 2.
6. Reinstall the button screws and locknuts that secure the existing footplate mounting bracket to the chair and tighten securely.

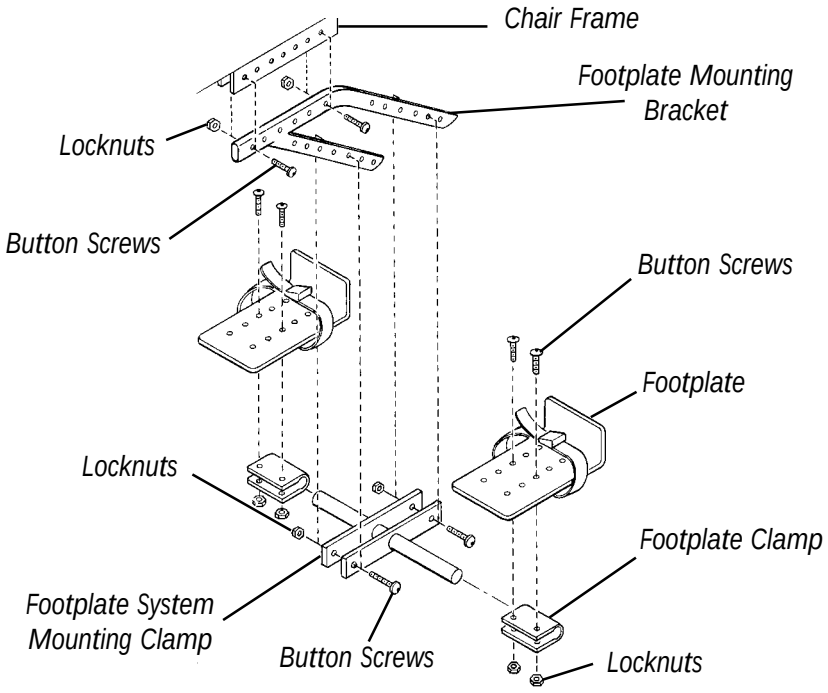


FIGURE 5 - T-3 TENNIS ELITE INDIVIDUAL FOOTPLATES - BEFORE 4/2000

T-3 TENNIS ADJUSTABLE FOOTREST SYSTEM - BEFORE 4/2000 (FIGURE 4)

WARNING

The position of the footrest, camber tube and rear seat height, as well as the tautness of the back upholstery are directly related to the chairs stability. Any change to one (1) or any combination of the four (4) may cause the chair to decrease in stability. Use EXTREME caution when using a new seating position.

ADJUSTING INDIVIDUAL FOOTPLATES

Height.

1. Loosen the two (2) set screws that secure the footrest weldment to the seat adjustment weldment.
2. Position the footplates to a height that is comfortable for the user.
3. Securely tighten the two (2) set screws that secure the footrest weldment to the seat adjustment weldment.

Angle.

1. Loosen the button screws and locknuts that secure the half clamps to the footrest weldment.

NOTE: The footplate clamps are located under the footplates.

2. Position footplates to an appropriate angle for user.
3. Securely tighten the button screws and locknuts that secure the half clamps to the footrest weldment.

Depth.

1. Remove the two (2) button screws and locknuts that secure the footplates to the half clamps.
2. Adjust the footplates to one (1) of five (5) depths.
3. Line up the mounting holes in the footplates with the mounting holes in the footplate clamps.
4. Install the button screws into the mounting holes and tighten securely with the locknuts.

REPLACING INDIVIDUAL FOOTPLATES

1. Remove the two (2) button screws and locknuts that secure the footrests to the footplate clamps.
2. Align new footplates on the footplate clamps at the desired depth.
3. Line up the mounting holes in the footplates with the mounting holes in the footplate clamps.
4. Install the button screws into the mounting holes and tighten securely with the locknuts.

REPLACING FOOTPLATE WELDMENT

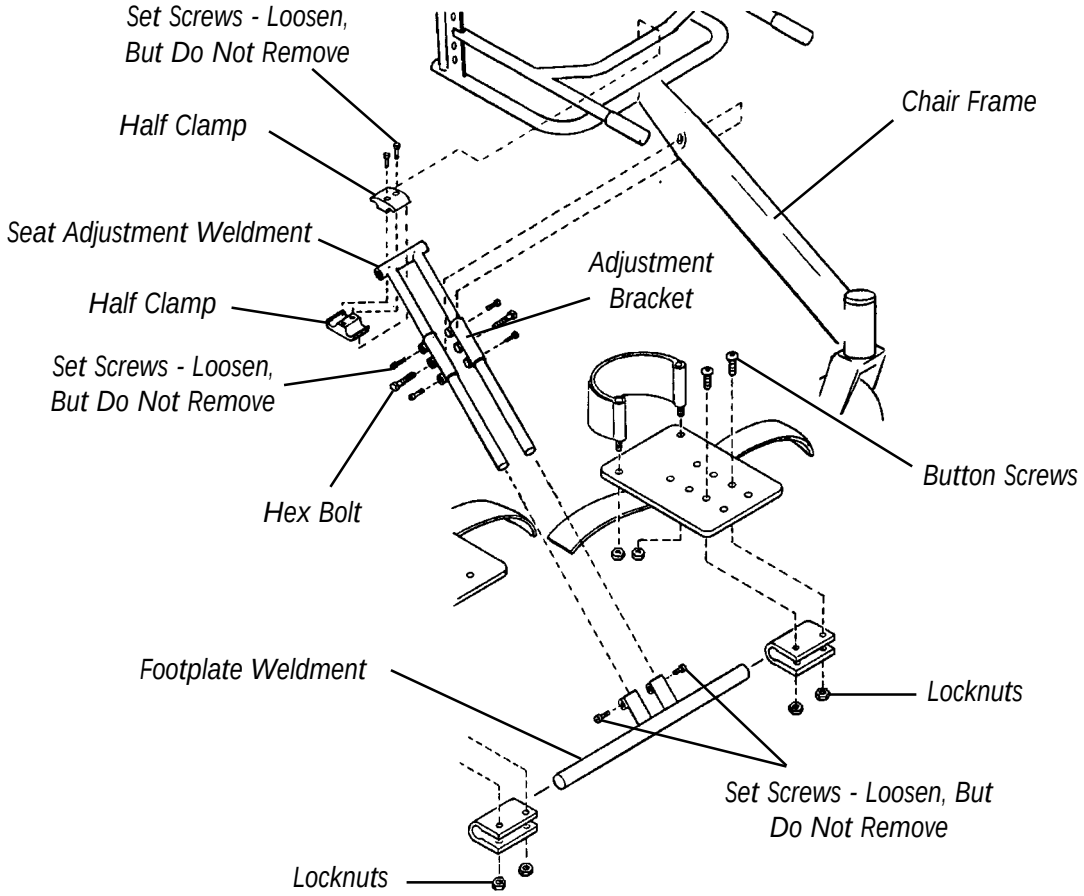
1. Loosen, but do not remove the button screws and locknuts that secure the footplates to the footplate weldment.
2. Slide the footplates off of the footplate weldment.
3. Loosen, but do not remove the two (2) set screws that secure the footplate weldment to the seat adjustment weldment.
4. Remove the existing footplate weldment from the seat adjustment weldment.
5. Install the new footplate weldment by reversing STEPS 1-4.
6. Adjust the footplates. Refer to ADJUSTING INDIVIDUAL FOOTPLATES in this procedure of the manual.

REPLACING SEAT ADJUSTMENT WELDMENT

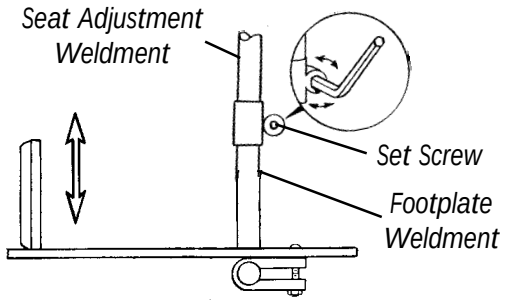
1. Remove the two (2) hex bolts that secure the seat adjustment weldment to the chair frame.
2. Loosen, but do not remove the two (2) set screws that secure the half clamps to the chair frame.
3. Remove existing seat adjustment weldment from the chair.
4. Loosen, but do not remove the four (4) set screws that secure the adjustment brackets to the seat adjustment weldment.
5. Loosen, but do not remove the two (2) set screws that secure the footplate weldment to the seat adjustment weldment.

NOTE: It is not necessary to remove the footplates from the footplate weldment.

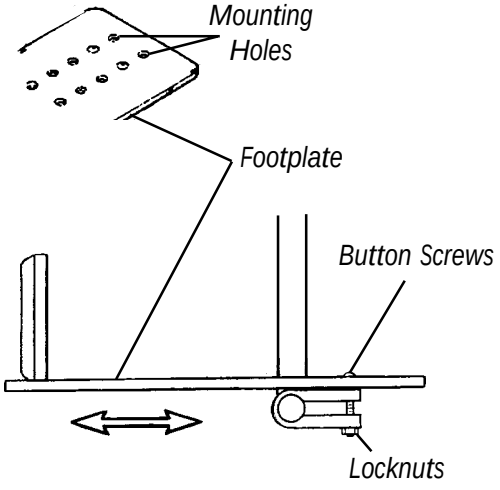
6. Remove the footplate weldment and adjustment brackets from the existing seat adjustment weldment.
7. Install the new seat adjustment weldment by reversing STEPS 1-6.
8. Adjust the footplate height. Refer to ADJUSTING INDIVIDUAL FOOTPLATES in this procedure of the manual.



HEIGHT ADJUSTMENT



DEPTH ADJUSTMENT



ANGLE ADJUSTMENT OR REPLACEMENT

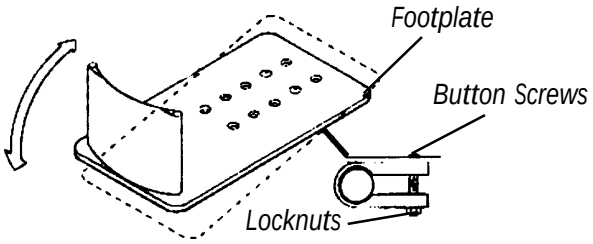


FIGURE 6 - T-3 TENNIS ADJUSTABLE FOOTREST SYSTEM - BEFORE 4/2000

This Procedure includes the following:
Replacing/Adjusting Fixed Anti-Tipper Swivel Caster
Installing/Adjusting Removable Anti-Tippers

WARNING

After ANY adjustments, repair or service and BEFORE use, make sure all attaching hardware is tightened securely - otherwise injury or damage may result.

REPLACING/ADJUSTING FIXED ANTI-TIPPER SWIVEL CASTER

T-3 ELITE AND T-4 ELITE WITH FIXED CAMBER TUBE (FIGURE 1)

Replacement.

1. Lift UP on the quick-release handle.
2. Remove the existing rear swivel caster from the chair.
3. Install the new rear swivel caster into the fixed anti-tipper bar.
4. Adjust the rear swivel caster. Proceed to ADJUSTMENT in this procedure of the manual.

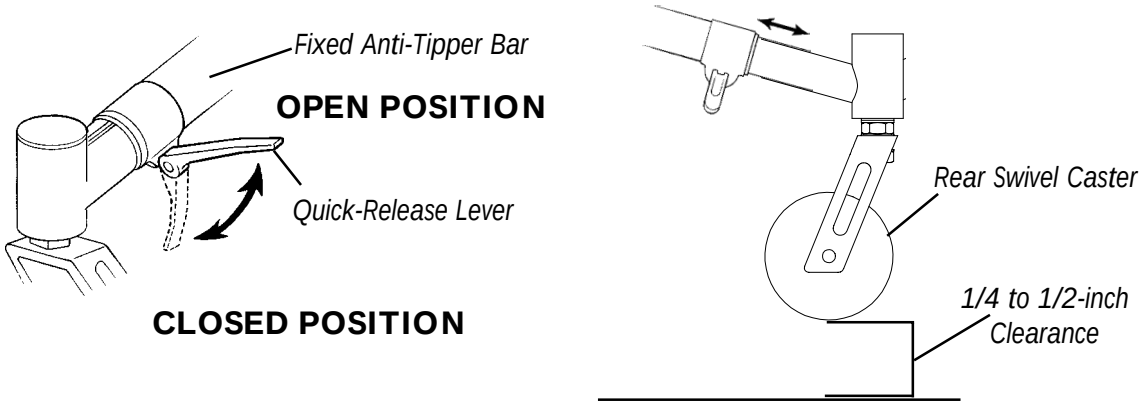


FIGURE 1 - REPLACING/ADJUSTING FIXED ANTI-TIPPER SWIVEL CASTER - T-3 ELITE WITH FIXED CAMBER TUBE

Adjustment.

WARNING

If the rear wheel size, rear wheel camber or the position of the adjustable axle camber bar is changed, the rear swivel caster MUST be readjusted to maintain a 1/4 to 1/2-inch clearance between the bottom of the rear swivel caster and the floor. Otherwise, injury or damage may occur.

1. If necessary, lift the quick-release handle UP to the open position.
2. Adjust the height of the rear swivel caster to to as close to the floor as possible.
3. Push the quick-release handle DOWN to the closed position.

T-3 TITANIUM AND T-4 TITANIUM ONLY(FIGURE 2)

Replacement.

1. Loosen the set screw on the anti-tipper headtube.
2. Slide the swivel caster down and out of the head tube.
3. Insert the new swivel caster up through the head tube.
4. Adjust the swivel caster. refer to adjusting in this procedure.

Adjusting.

1 Loosen the set screw on the anti-tipper headtube.

2. Adjust the anti-tipper swivel caster to 1/2 to 1/4-inches from the floor.
3. Tighten the set screw on the anti-tipper headtube.

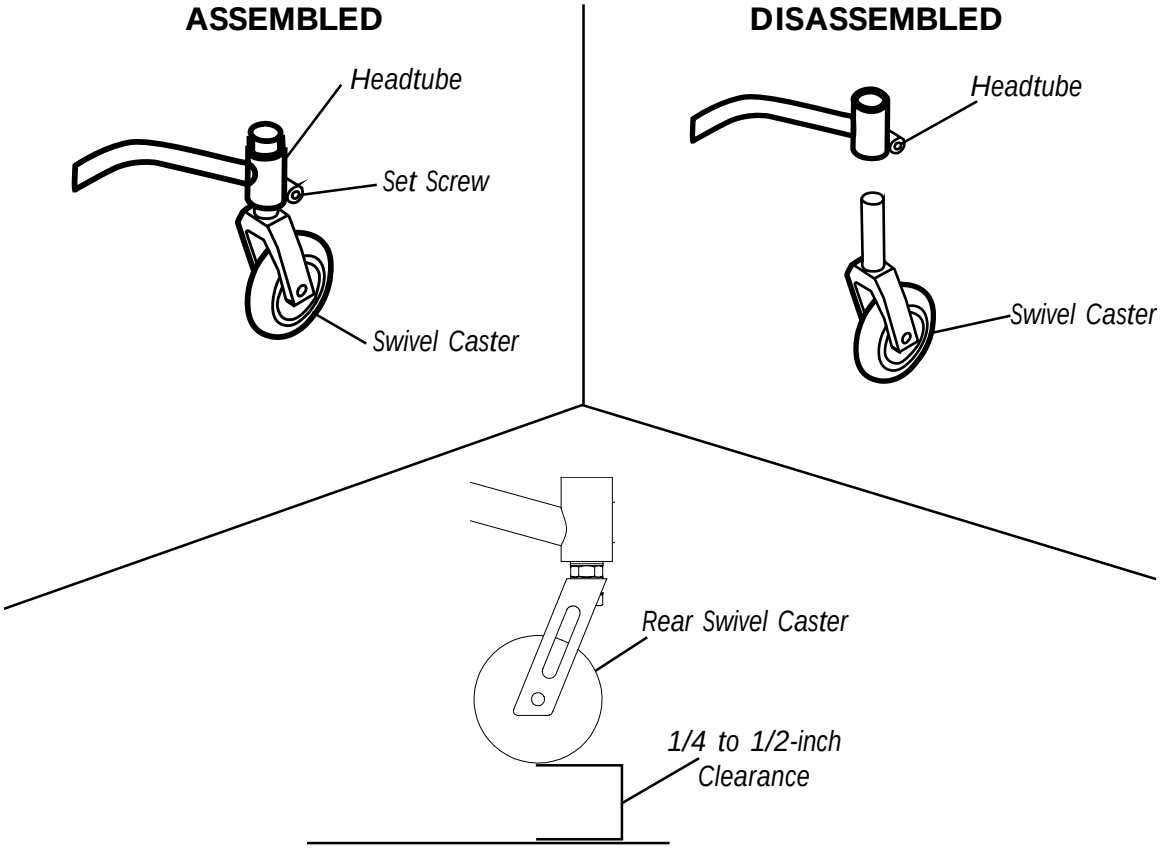


FIGURE 2 - REPLACING/ADJUSTING FIXED ANTI-TIPPER SWIVEL CASTER - T-3 TITANIUM AND T-4 TITANIUM ONLY

INSTALLING/ADJUSTING REMOVABLE ANTI-TIPPER

T-3 ADJUSTABLE - AFTER 2001 (FIGURE 2)

WARNING

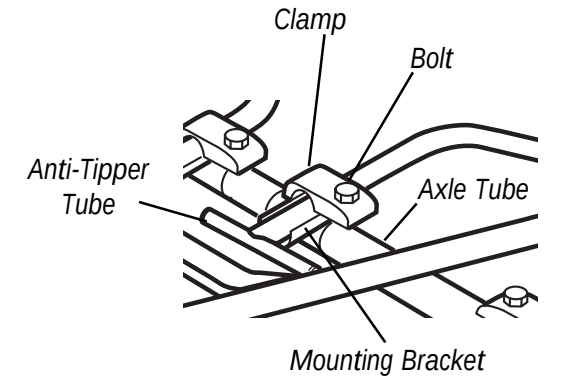
If the rear wheel size, rear wheel camber or the position of the adjustable axle camber bar is changed, the rear swivel caster MUST be readjusted to maintain a 1/4 to 1/2-inch clearance between the bottom of the rear swivel caster and the floor. Otherwise, injury or damage may occur.

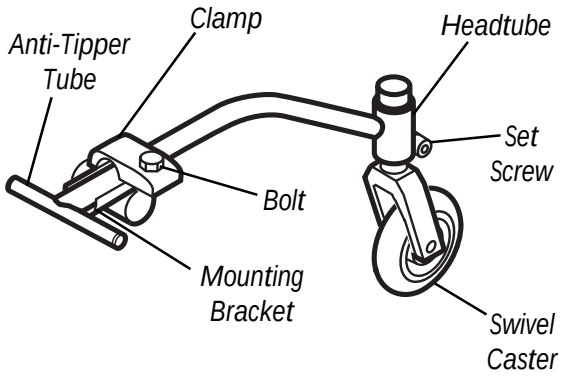
INSTALLING

1. Remove bolt securing clamp to mounting bracket.
2. Position the anti-tipper tube in the mounting bracket.
3. Position the clamp on top of the anti-tipper tube.
4. Loosely install the bolt through the clamp and into the mounting bracket.
5. Ensure the anti-tipper wheel is toward the ground/floor.
6. Place the wheelchair upright on a flat surface.
7. Position a large right triangle or "L" square on the flat surface and against the anti-tipper headtube.
8. Adjust the angle of the anti-tipper until the anti-tipper headtube is square against the right triangle or "L" square.
9. Tighten the bolt to secure the anti-tipper to the mounting bracket.
10. Adjust the height of the swivel caster to maintain a 1/4 to 1/2-inch clearance. Refer to ADJUSTING in this procedure.

ADJUSTING

1. Loosen the set screw on the anti-tipper headtube.
2. Adjust the anti-tipper swivel caster to 1/2 to 1/4-inches from the floor.
3. Tighten the set screw on the anti-tipper headtube.





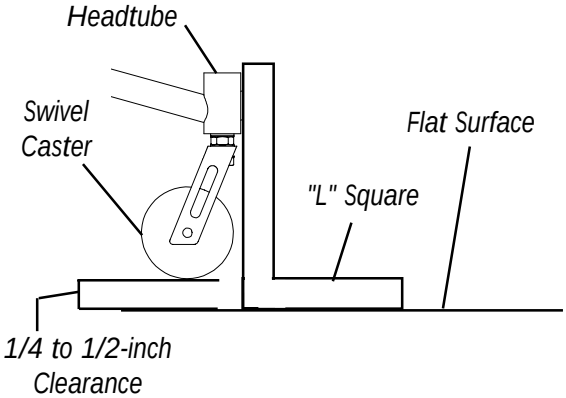


FIGURE 2 - INSTALLING/ ADJUSTING REMOVABLE ANTI-TIPPER - AFTER 2000

ALL T-3 ELITE MODELS WITH ADJUSTABLE AXLES AND T-3 ADJUSTABLE MODELS MANUFACTURED BEFORE 2001 (FIGURE 3)

1. Press in the two (2) push pins on the anti-tipper and insert the anti-tipper into the chair frame.
2. Position the NEW anti-tipper to one (1) of two (2) mounting holes depending upon the position of the adjustable axle position camber bar.

NOTE: A 1-1/2 to 2-inch clearance between the bottom of the anti-tipper wheels and the floor must be maintained.

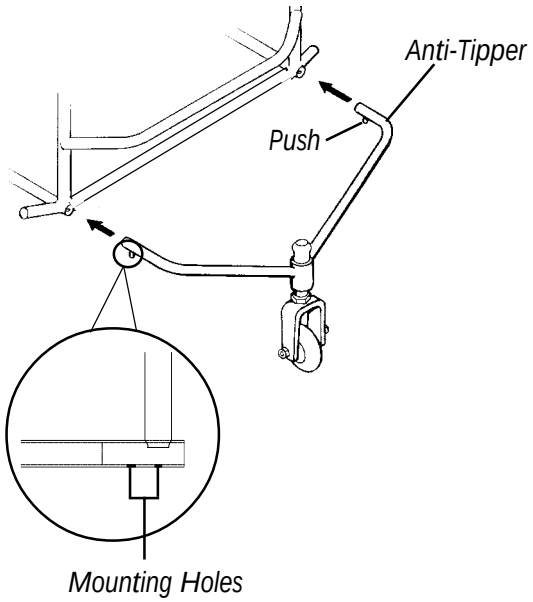


FIGURE 3 - INSTALLING/ADJUSTING REMOVABLE ANTI-TIPPER - ALL T-3 ELITE MODELS WITH ADJUSTABLE AXLES AND T-3 ADJUSTABLE MODELS MANUFACTURED BEFORE 2001

LIMITED WARRANTY

PLEASE NOTE: THE WARRANTY BELOW HAS BEEN DRAFTED TO COMPLY WITH FEDERAL LAW APPLICABLE TO PRODUCTS MANUFACTURED AFTER JULY 4, 1975.

This warranty is extended only to the original purchaser/user of our products.

This warranty gives you specific legal rights and you may also have other legal rights which vary from state to state.

Invacare warrants the T-3 and T-4 frame to be free from defects in materials and workmanship for 2 years from date of purchase. All manufactured and distributed parts and components of Invacare (including camber tubes, caster forks, armrests, anti-tip bars, upholstery, etc.) are warranted against defects in materials and workmanship for a period of one (1) year from the date of purchase. Items not warranted are all tires, tubes, push handle grips, foam parts, bushings and bearings. If within such warranty period any such product shall be proven to be defective, such product shall be repaired or replaced, at the option of Invacare. This warranty does not include any labor or shipping charges incurred in replacement part installation or repair of any such product. Invacare's sole obligation and your exclusive remedy under this warranty shall be limited to such repair and/or replacement.

For warranty service, please contact the dealer from whom you purchased your Invacare product. In the event you do not receive satisfactory warranty service, please write directly to Invacare at the address on the back cover. Provide dealer's name, address, date of purchase, indicate nature of the defect and, if the product is serialized, indicate the serial number. Do not return products to our factory without our prior consent.

Limitations and Exclusions: The foregoing warranty shall not apply to serial numbered products if the serial number has been removed or defaced, products subjected to negligence, accident, improper operation, maintenance or storage, commercial or institutional use, products modified without the express written consent of Invacare (including, but not limited to, modification through the use of unauthorized parts or attachments; products damaged by reason of repairs made to any component without the specific consent of Invacare, or to a product damaged by circumstances beyond the control of Invacare, and such evaluation will be solely determined by Invacare. The warranty shall not apply to problems arising from normal wear or failure to adhere to these instructions.

THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTIES WHATSOEVER, WHETHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND THE SOLE REMEDY FOR VIOLATIONS OF ANY WARRANTY WHASOEVER, SHALL BE LIMITIED TO REPAIR OR REPLACEMENT OF THE DEFECTIVE PORDUCT PURSUANT TOT HE TERMS CONTAINED HEREIN. THE APPLICATION OF ANY IMPLIED WARRANTY WHATSOEVER SHALL NOT EXTEND BEYOND THE DURATION OF THE EXPRESS WARRANTY PROVIDED HEREIN. INVACARE SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES WHATSOEVER.

THIS WARRANTY SHALL BE EXTENDED TO COMPLY WITH STATE/PROVINCIAL LAWS AND REQUIREMENTS.

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